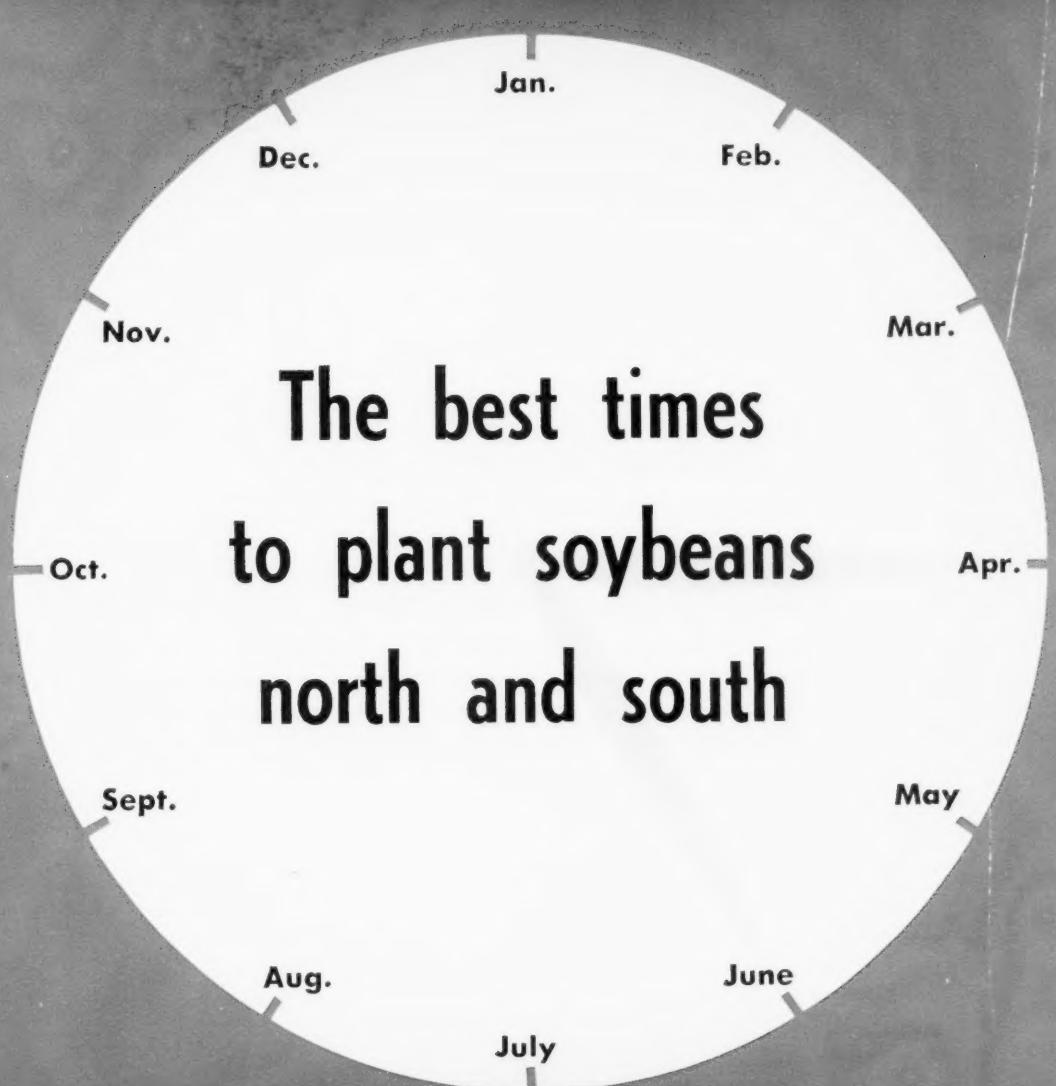


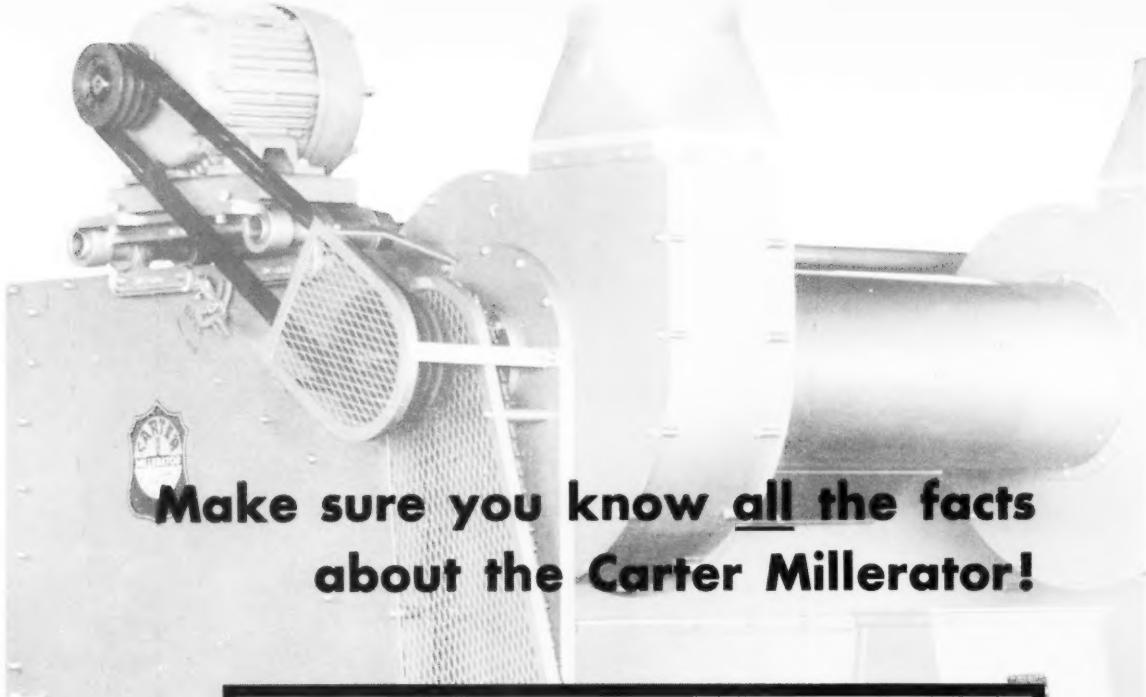
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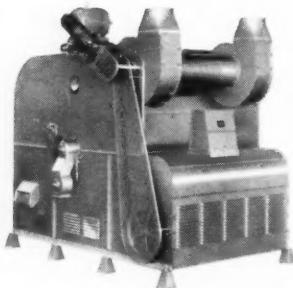


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Official Publication of American Soybean Association and
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HUDSON, IOWA

Vol. 18

May, 1958

No. 7

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THE SOYBEAN DIGEST

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EDITOR'S DESK

By GEO. M. STRAYER

JAPAN TRADE HANGS IN BALANCE

My 3 weeks in Japan were interesting and busy ones. Timed to come just ahead of the Osaka International Trade Fair, I arrived just as the efforts of certain Japanese governmental personnel to channel more soybean purchases to Red China, and away from U. S. sources, were coming to a head. We were successful in stopping the expected special allocation of funds for the purchase of Red China beans.

Announced official Japanese governmental position is global allocation. If really carried out on that basis it will mean that every individual buyer can make his purchases where he chooses, based on quality and price. That is all we have any right to expect, for certainly we are in no position to demand special privileges in Japan.

But Japan is in the Orient. The announced position and the actual are sometimes different. Global allocation in this case may be a mere sham—a front for pressures. It appears to be just that. Even after the official announcement was made, members of the staff of the Ministry of Agriculture and Forestry continued to meet with the trade groups that buy soybeans, insisting that certain quantities of Chinese soybeans be purchased, threatening to take steps if they were not.

We must remember that every ton of soybeans imported into Japan is subject to governmental allocation of funds. No allocation—no import. The individual buyer is at the mercy of governmental agencies. And in this case members of the agency staffs—contrary to announced policy—continue to insist that a minimum quantity of Red China beans be purchased. They can make it stick, for they control the allocation of funds.

Red China has only about 300,000 tons of soybeans to offer, according to reports. That is roughly 100,000 tons more than any year since the war. But she has already announced she will have 400,000 tons from 1958 crop. All increases must come out of the tonnage that we have been getting in recent years, unless the import allocations are increased. Last year they were actually decreased.

Japan's dollar position is not good. She buys much more from us than we are willing to buy from her. That situation cannot go on for long. As our military expenditures in Japan are decreased, her dollar earnings decrease. We must make up our minds to import more Japanese goods

if she is to increase her imports from us. Japan's sterling position is relatively better than her dollar position. Purchases from Red China can be made with sterling. But the present steel-soybean deal is in reality a barter transaction.

On our side is the desire of buyers for U. S. soybeans. Higher oil content and higher protein content make higher product yields. U. S. beans are actually worth several dollars per ton more than Red China beans. Buyers recognize it, resist governmental pressures as long as possible.

Price on the April-June Red China imports, to trading companies, was 32 pounds 18 shillings. Already tonnages are being offered at 32 pounds—well below cost, but just above the 3% penalty for forfeiture of contracts. Some 265,000 tons have been contracted for the year. Dependent on our prices and on ocean shipping costs, that tonnage may or may not be actually shipped from Red China. Time will tell.

Japanese government officials, prodded by trade groups having great influence with government, are determined to do business with Red China on soybeans. Their degree of success will be dependent on our moves to hold the market. Price will be very important. Dollar availability, through trade or through loans, will also be very important. Buyers want our product. Whether or not they can get it depends partially on us.

HEALTHY FOREIGN INTEREST

As never before in history the gospel of American soybeans and soybean products is being preached round the world. Two representatives of the American Soybean Association are in Japan telling our story at the Osaka International Trade Fair. Dr. Damon Catron of Iowa State College and Dr. Max Jeter of Indiana Farm Bureau Cooperative are telling the story of soybean oil meal to the Italian Feed Manufacturers Conference in Rome on May 8. Dr. J. L. Krider of Central Soya Co., Inc., will serve as technical nutritionist at the Varese Fair in Italy and will address the Italian Poultry Congress on soybean oil meal in poultry feeding. Both Italian projects are under sponsorship of the Soybean Council. All are in conjunction with Foreign Agricultural Service.

Dr. E. M. James has just returned from Turkey, where he worked for a period of time with Turkish oil refiners and manufacturers of food and soap products in the use of American soybean

oil. In November and December he did a similar job in Spain. Other similar assignments for him, as oil technician for the Soybean Council, are under consideration.

Several companies in the soybean industry are becoming interested in the possibility of plants or cooperative working agreements with feed mixers, oil refiners and oilseed crushers in foreign countries. That is a very logical step, for as the world's largest producer and exporter of oilseeds it is only logical that U. S. firms become interested in carrying their products to consumers beyond the shores of the United States.

The production of soybeans, and the resultant production of soybean oil, are today far above domestic needs. We must recognize that through a long period of years we will rely on markets outside the United States for a major portion of our production of the soybean crop. The techniques of processing, of oil refining and of the production of food products from soybean oil have progressed much further in the United States than in most countries of the world. It is time our companies interested themselves in taking our products to consumers around the world. The present interest of many firms is a healthy sign.

MAY FACE SURPLUS PROBLEMS

Soybean acreage in 1958 seems destined to be by far the biggest in history. Large acreages are coming out of corn in the Midwest. Some of them will go into soybeans. Small grain seeding last fall in the Southern States was below anticipated levels, because of the wet weather. This spring the same type of weather has prevailed, further reducing acreage in other crops and making it appear probable that soybean acreage will zoom upward. Moisture supplies in several of the states to the west edge of the Cornbelt are the most adequate in years, and soybean acreage in those areas will jump upward.

It all adds up to the biggest acreage in history. Given a normal production season we will have well above 500 million bushels of soybeans. We'll have a carryover as large or larger than ever before in history.

Concentrated sales efforts will be needed to move the maximum amount of soybeans into export channels, and move the oil and meal produced here.

But it now appears to be the year when we will need every possible effort to sell every possible pound of product—or be faced with some of the surplus problems which have plagued other commodity groups.

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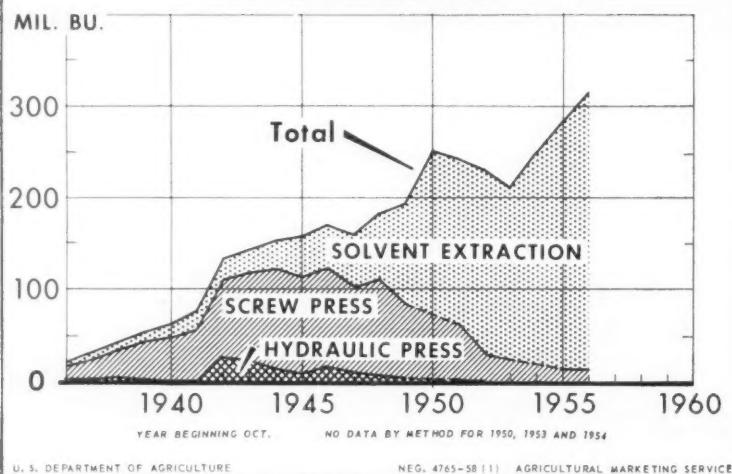
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SOYBEANS CRUSHED, BY METHOD OF PROCESSING



SINCE World War II the soybean processing industry has been shifting to the more efficient solvent extraction method.

Trends in Processing and Marketing

Recent trend to solvent extraction; to greater use of soybean oil in margarine and shortening; and to smaller margins.

By C. B. GILLILAND

Agricultural Marketing Service. Before joint Cooperative Oil Mill Conference at Mason City, Iowa

THE SHIFT in methods used for extracting oil from the vegetable oilseeds has been most evident in the soybean industry. In 1952-53 the solvent method of extraction accounted for approximately 86% of the beans crushed. During the 1956-57 season solvent extraction had increased until it accounted for 95% of the 316 million bushels of soybeans processed. The remaining 5% of the beans was processed by the screw-press or hydraulic methods of extraction.

The majority of the solvent type mills are located in four of the major soybean producing states. Of the 316 million bushels processed during the 1956-57 season, these four major soybean states accounted for approximately 74% of the total. Illinois led all other states by processing approximately 37% of the beans, followed in order by Iowa, 17%; Ohio,

11%; and Indiana, 9% (see table). A large number of the mills using the screw-press or hydraulic methods of extraction are located in the Cotton Belt states. It is the practice of most of these mills to process soybeans after their supply of cottonseed has been exhausted.

The quantity of crude soybean oil produced during the 1956-57 season amounted to approximately 3.5 billion pounds. Solvent extraction accounted for approximately 3.3 billion pounds and screw-press and hydraulic accounted for the remaining 200 million pounds of crude oil. Since the 1952-53 season there has been a slight increase in oil recovery. In 1952-53 screw-press yields were 9.1 pounds of oil per bushel and solvent 11.1, as compared to 1956-57 screw-press yields of 9.4 and solvent extraction yields of 11.2 pounds per bushel. The United States average for all methods in 1956-57 was 10.9 pounds per bushel.

Other changes of importance have been the decrease in number of mills processing soybeans and an increase

in the average annual quantity processed per mill. The number of mills has decreased from 174 in 1952-53 to 110 in 1956-57 or approximately a 63% decrease. In comparison, mills have increased their average annual processing per mill from 1.3 million bushels in 1952-53 to 2.9 million bushels in 1956-57 or approximately a 114% increase.

Based on a 12-month crushing season and the quantity processed during the biggest month of operation during the 1956-57 season, the soybean industry utilized approximately 85% of an estimated 370-million-bushel processing capacity.

Cottonseed

The cottonseed crushing industry has been somewhat slower in making the change from the hydraulic and screw-press methods of extraction to the solvent method.

In the 1956-57 season there were approximately 4.9 million tons of cottonseed processed. Of this quantity, 28% was by the hydraulic method, 45% by the screw-press

method, and the remaining 27% by the solvent method of extraction. Cottonseed processed by the solvent method of extraction has increased about 6% since the 1952-53 season. The high-speed screw press has been about double this rate of increase.

Not only has there been a steady change in the type of process used, but also the number of mills and the quantity of seed which they are able to process have changed. During the 1956-57 season there were 252 mills in operation, as compared to 303 mills in the 1952-53 season or a 17% decrease. In 1956-57 the 252 mills crushed 4.9 million tons or 9% less than was processed in 1952-53. Even though there was a decrease in the total quantity of cottonseed, the average processed per mill increased from 18,000 to 19,600 tons per mill.

Margarine and Shortening

In the 1956-57 season there were 101 plants, located in 31 states, involved in the process of manufacturing margarine and shortening. The production of shortening equalled about 1.8 billion pounds, while that of margarine was approximately 1.5 billion pounds.

During the big month of production the percentages of oils used in the production of shortening were as follows: soybean oil 38%, cottonseed oil 17%, lard 29% and tallow 7%. The remaining 9% was made up of vegetable and animal stearin, glycerides, and other minor oils.

The major oils consumed in the production of margarine were: soybean oil 71%, and cottonseed oil 23%. The remaining 6% included vegetable and animal stearin, lard, tallow, glycerides, deodorized oil, and other minor vegetable and animal oils.

The major change that has been taking place in this industry has been in the decrease in the quantity of cottonseed oil used in the production of shortening and the increased use of lard.

In 1955 cottonseed oil contributed 22% and lard 17% to the total oil used in the manufacture of shortening. Then in 1956 for the first time more lard was used than cottonseed oil, with lard contributing 25% and cottonseed oil 17%. Based on data for the big month of production, this trend in the increased use of lard seems to be continuing in the 1957 season. The data show lard contributing 29% and cottonseed oil 17%.

Based on a 12-month operating season and the quantity produced during the biggest month of operation, the shortening and margarine

industries are utilizing approximately 72% and 77% of their respective 2.5-billion and 1.9-billion-pound production capacity.

Costs and Margins

Although prices have been falling since the peak periods of 1945 and 1951, the farmer's share of the consumer dollar is still higher than before the war. In 1940 the farmer's share for soybean and cottonseed oils was 19%. In 1945 it was 37% and in 1950 it was 40%. In 1955 the farmer's share was back to 26%, and at present is about 25%.

The soybean farmers' returns from margarine amounted to roughly \$75 million in 1955; in the same year the returns from shortening added up to \$95 million. The cottonseed producer received \$21 million and \$33 million, respectively, from the same two products.

Some elements of costs illustrate the changes taking place in the industry. Elevator rates for storage of soybeans were about 4.4¢ per bushel in 1950, compared with 6.9¢ in 1956-57, for 150 days of storage. Cottonseed, on the other hand, is usually sold to the processor directly after

ginning without incurring storage costs.

Wage rates, which make up a sizable part of the processing cost, jumped appreciably between 1940 and 1955. But the labor cost per unit for both oils dropped during the same period due to increased mechanization and processing efficiency. Wage rates, fuel, and raw material are still higher for cottonseed than for soybeans.

Soybean Irrigation Will Not Pay on Most Illinois Soils

RESEARCH data and farm experience to date indicate that corn and soybean irrigation will not pay for itself on most Illinois soils under normal rainfall conditions, D. B. Peters, USDA agronomist at the University of Illinois, told a recent irrigation clinic.

However, corn and soybeans have produced profitably higher yields under irrigation on some of the sandy soils of the state, Peters said.

Farmers who produce soybeans and other crops for seed may be able to make irrigation pay, a panel of irrigation users concluded.

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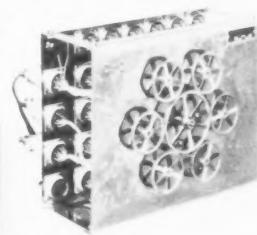
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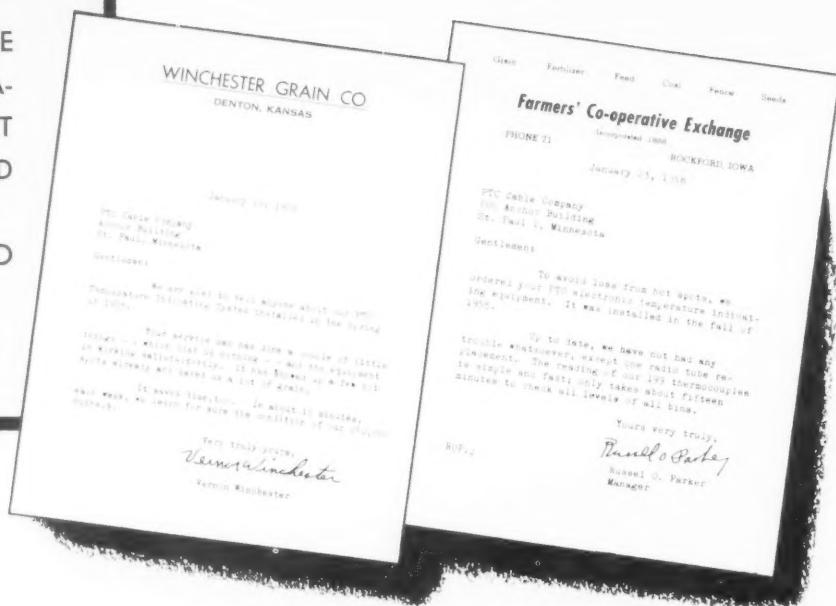
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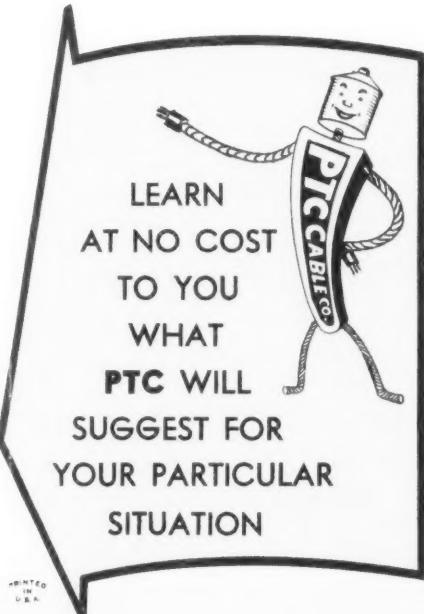


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THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

New Market Programs For Spain, Italy

Market development projects for U. S. soybeans and soybean products were extended as of May 1 under agreements signed between the Soybean Council of Americas, Inc., and USDA's Foreign Agricultural Service, the co-sponsors of the market projects.

The Italian agreement, which covers also the general European office at Rome, will run for 18 months, and the Spanish agreement for 1 year. Agreements were signed for the Council by Howard L. Roach as president and Geo. M. Strayer as executive director.

The Council's objective in its European programs is to maintain and develop expanding markets for U. S. soybeans and soybean products in co-operation with FAS. Funds for the projects come from FAS, the Council, and European cooperators.

Spain offers the largest potential market for U. S. soybean oil in Europe and also a possible growing market for livestock and poultry feeds.

In Italy, there is a great interest in expanding the livestock economy, and particularly the development of a poultry industry patterned after that of the United States. (See report by Dominic Marcello on page 39.)

Outlook For Japan Trade Muddled

The recent stampede of some Japanese importers to buy Chinese soybeans for delivery in the next 4 quarters has opened a new threat to U. S. exports of soybeans in Japan, but it is still uncertain just what the eventual effect will be.

A total of 265,000 metric tons of Chinese beans had been contracted as of Apr. 15, compared with total Japanese imports of 200,000 tons of Chinese beans last year, according to Shizuka Hayashi, managing director of the Japanese American Soybean Institute. The deals were made in anticipation of Chinese beans becoming available in exchange for Japanese steel products recently sold to Japan.

Purchase price of the Chinese soybeans for April-June delivery was 32 pounds 18 shillings F.O.B. Chinese ports (equivalent to a little over \$96 per ton in Japan). But already tonnages are being offered on resale contracts at 32 pounds, well below cost, and it is uncertain just how many Chinese soybeans will actually be delivered.

Geo. M. Strayer, executive vice president of the American Soybean Association, returned to this country from Japan in April predicting that the U. S. market for soybeans in that country could shrink by 3.7 million bushels as the result of increased Chinese sales in the coming Japanese fiscal year.

Strayer says that Japan's announced official policy is global allocation, which would allow each individual buyer to purchase his soybeans where he chooses but in spite of this the government continues to put pressure on Japanese trade groups to buy Chinese soybeans. (See Strayer's editorial on page 4.)

Strayer says the U. S. soybean market development program in Japan has made us many friends there.

The American Soybean Association and the Oregon Wheat Growers' League are now teamed to expand nutrition demonstrations in Japan through the use of kitchen buses. The project went into operation May 1.

During the next 2 years 12 buses with Japanese nutritionists will carry the story of low-cost meals, which include both U. S. wheat and soybeans, to Japanese housewives.

Soybean Planting Just Started

From 5% to 10% of the soybean crop had been planted in the vicinity of Blytheville, Ark., by late April, Paul C. Hughes, Farmers Soybean Corp.,

at Blytheville, reports. But most land had not yet been prepared for the crop in that state, according to the Weather Bureau.

About 5% of the crop was planted in northeastern Louisiana by late April, according to W. M. Scott, Jr., Scott Plantations, Tallulah.

Cotton planting is reported behind schedule in the Missouri bootheel due to an overabundance of moisture. Cotton planting is generally late in southern areas.

The weather has been favorable for land preparation in Northern States and **land is generally ready for both corn and soybeans in these states.** Farmers are generally waiting for a warming trend in the weather to start planting corn—a little has been planted in southern Iowa.

Oat planting was ahead of schedule in most North Central States, but delay in oat seeding may mean more soybean acres in Nebraska, Kansas and Oklahoma.

Our reports continue to indicate a national increase in soybean acreage at least in line with USDA's Mar. 1 planting intentions report.

Our reporters look for increases of from 5% to 10% in north central areas, from 24% to 30% in states west of the Missouri River, and a large boost in acres in the Midsouth.

J. E. Johnson, Champaign, Ill., believes **per acre yields will be more stable from now on than they have been in the past.** "With present equipment and know-how low yields are not the factor they once were. More chemical treatment of weeds used every year. The plant food programs used with wheat and corn are being reflected in the soybean crops."

Soybeans are moving into the upper sugar cane areas of Louisiana in increasing acreages, according to Scott at Tallulah. Scott believes the expansion in soybean acreage in his area may not be as great as expected due to lack of good planting weather, however. "We have been continually wet since September," he says. "No fall plowing. Spring land preparation and planting about 40% normal. Not excessive moisture; just not enough drying time."

**Railroads
Ask for
Lower Rates**

Southern railroads have filed applications with Interstate Commerce Commission asking permission to cancel a proposed increase of 6¢ per 100 pounds to apply to freight in the area. And the roads have suggested **lower carlot rates on soybeans from origins in Arkansas, Louisiana and Missouri destination New Orleans and other eastern Gulf ports for export.** The carriers note increasing barge and truck competition in the Midsouth and southern Illinois, reversing a stand taken a few years ago when they contended barge competition was not an important factor. And the Chicago Great Western Railway has also proposed reduced carlot rates on grains and soybeans from Minnesota points to Gulf ports for export between Apr. 1 and Oct. 31 of each year.

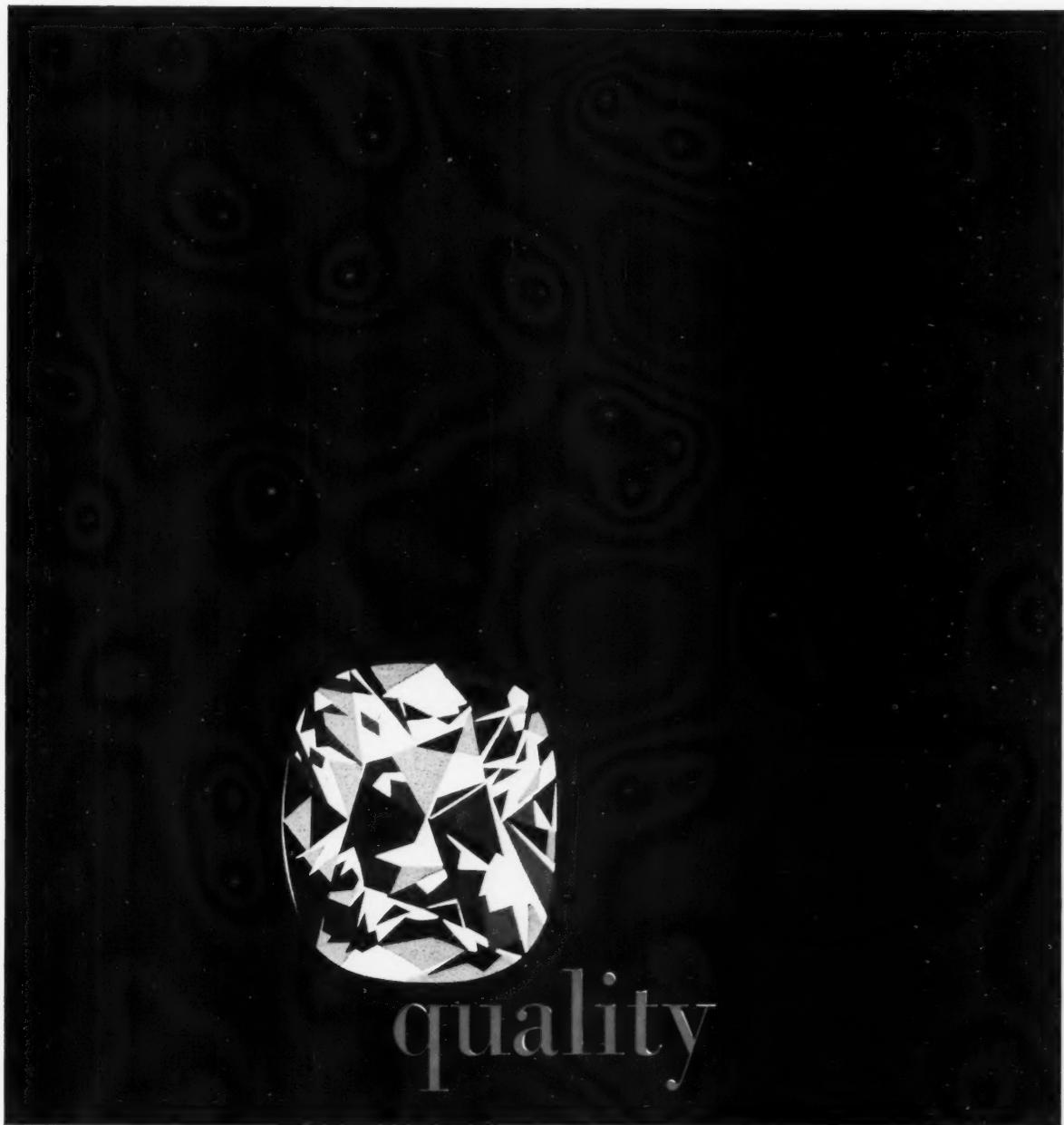
Four Western Trunk Line roads have filed notice that they plan to reduce interstate freight rates "substantially" on grain and soybeans and their products from points of origin to primary markets.

Joining in the action are the Chicago Northwestern, Chicago Great Western, the Milwaukee Road and the Minneapolis and St. Louis. The lower rates will apply to North and South Dakota, Minnesota, Iowa, Missouri and Wisconsin stations in shipments to primary markets in the general area.

**Margarine
Bill Passes
House**

The U. S. House passed H.R. 912 to **permit the serving of margarine to U. S. Navy personnel**, but with the amendment that it can be served only when surplus stocks of butter from Commodity Credit Corp. are not available. The exception is some overseas areas where the use of butter would be impracticable.

The bill was reported to the Senate and referred to the Senate armed services committee on Apr. 23. The Senate is not expected to consider H. R. 912 for several weeks.



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TIME OF PLANTING STUDIES¹

By J. L. CARTTER²

Relationship of planting time to yield, maturity and other traits is not generally understood. The following two articles for Northern and Southern States should throw light on the subject.

Northern States

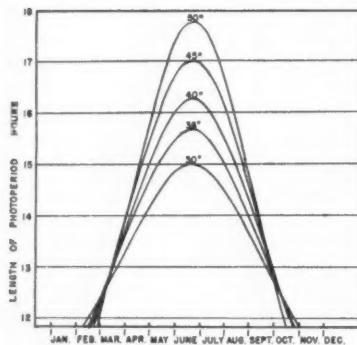


Figure 1. Effect of latitude on length of days.

PROBABLY no single cultural factor is more important to soybean production than the date of planting. As W. J. Morse stated in an article in the first volume of the Soybean Digest³, "similar to many other agricultural problems, it is one to which an exact answer cannot always be given." A number of studies on date of planting, most of them within the last 2 decades, have brought out much basic information on which we can base our decisions as to the best time to plant.

The time of blooming and maturing of the soybean is governed to a great extent by the length of day. This reaction was discovered by Garner and Allard, two scientists of the U. S. Department of Agriculture working at Arlington, Va., around 40 years ago. They called this phenomenon, which is common to many types of plants, photoperiodism, a term indicating the reaction of plants to the period of light. Later studies by Parker and Borthwick⁴, using different periods of artificial light and darkness, determined that the period of darkness was the controlling factor. Since a variety blooms in the field only when the days are shortened below a critical value for the variety, soybeans are called short-day plants. This photoperiodic response or effect of day length on plant behavior is an important factor in soybean production.

One well-known example of photoperiodic effect is the delay in date of blooming and maturing of a soybean variety as it is moved north. The graph, figure 1, shows how the maximum day length on June 21 increases as one travels north, the difference amounting to some 45 minutes between the latitude of Urbana, Ill., and St. Paul, Minn. Assuming that a full season variety at Urbana (Clark, for example) is able to bloom around the first of July when the day length has decreased to 16 hours, 15 minutes, this same photoperiod would not be reached at St. Paul until July 20.

The corresponding delay in blooming and maturing would mean that the variety would not mature before frost, and this is just what happens. This rather precise plant response to latitude is illustrated in the following table, which shows the average maturity date for the Lincoln variety at five locations arranged in latitude from north to south:

Location	Latitude	Lincoln Maturity Date
Madison, Wis.	42° 34"	Oct. 2
DeKalb, Ill.	41° 50"	Oct. 1
Dwight, Ill.	41° 8"	Sept. 27
Urbana, Ill.	40° 8"	Sept. 17
Eldorado, Ill.	37° 52"	Sept. 8

It can readily be seen why a variety may be thought of as late in one locality and early in another locality 100 miles south, and also why soybean varieties are said to be adapted to rather narrow belts of latitude.

Effect on Maturity

A study was conducted at Urbana, Ill., in 1950-52 to measure the effect of planting date on maturity, yield and other agronomic and chemical traits. Four dates of planting were

¹Publication No. 317 of the U. S. Regional Soybean Laboratory, Urbana, Ill. ²Research Agronomist, Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture. ³Soybean Digest, Vol. 1, No. 5, March 1941. ⁴Soybean Digest, Vol. 11, No. 11, September 1951.

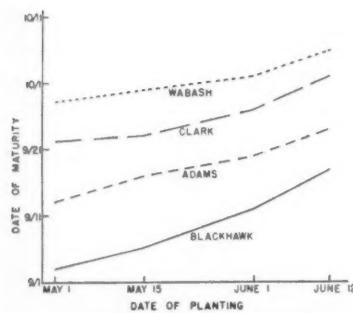


Figure 2. Relation of planting date to maturity date for four soybean varieties, Urbana, Ill., 1951-52.

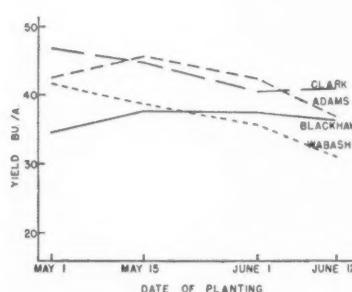


Figure 3. Relation of planting date to yield for four soybean varieties, Urbana, Ill., 1951-52.

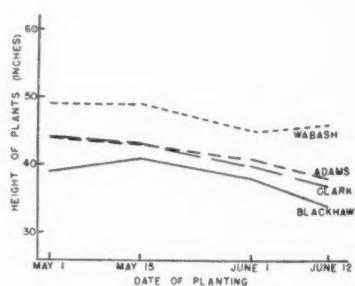


Figure 4. Relation of planting date to plant height for four soybean varieties, Urbana, Ill., 1951-52.

used, extending from May 1 to June 12, and several varieties ranging in maturity from Blackhawk to Wabash. Blackhawk is adapted as a full-season bean in northern Illinois, and Wabash in southern Illinois.

Figure 2 shows the number of day's delay in date of maturing occasioned by the delay of as much as 6 weeks in planting for four typical varieties. The greatest extremes were between the earliest variety, Blackhawk, and the latest strain, Wabash. Blackhawk maturity was delayed 16 days for 43 days' delay in planting, but Wabash was delayed only 8 days.

We can state, as a general principle, that for a given locality the maturity date of late varieties is less affected by date of planting than is the maturity date of early varieties.

The reason for this lies in the length-of-day effect on the plant. The early varieties for any given locality when planted late will change from a vegetative to a reproductive type of growth only a few weeks after planting, since the day length will already be shorter than the critical length for initiation of blooming, but the later varieties, which need a still shorter day to bloom, will remain in a vegetative type of growth until later when the summer days have become shortened to their critical length for blooming.

Effect on Yield

Recommendations for date of planting soybeans are usually based on the best date to plant full season varieties—those that will utilize the full growing season and ripen just before the normal frost date. In the recent date-of-planting study at Illinois, varieties having a normal maturity spread of over 2 weeks were used.

Figure 3 shows the effect of planting date on yield for four varieties included in the test, Blackhawk being the earliest and Wabash the latest. Blackhawk yielded lowest when planted May 1, and while the yield was slightly higher for the

other three planting dates, the performance of Blackhawk was well below Clark, the best strain at all dates. Adams yielded best when planted May 15, suffering a 9-bushel decrease for a 4-week planting delay beyond that date. Clark and Wabash, two varieties a little late for Urbana, produced their highest yields when planted early and, Wabash especially, experienced a steady decline in yield with successively later planting dates.

From these results it can be seen that no single date of planting was best for all varieties but, in general, the early varieties did best when planted around the middle of May and late varieties yielded best when planted early. Clark was the best yielding variety in the test, even at the late dates of seeding.

Clark seems to have an unusual ability to do well even under extremely late planting. In 1957 Clark, planted on an impervious soil type in south-central Illinois July 6, a date so late as to be regarded as very hazardous, produced 43 bushels per acre, a yield above normal in that area even for timely planting. In that season conditions in the area during late summer were unusually favorable for soybeans.

Blackhawk, which was a very early variety in the Illinois tests, behaved as a late variety in Minnesota tests conducted by J. W. Lambert, yielding 30 bushels per acre for May 28 planting, 23 bushels for June 12, and 11 bushels for June 30, thus showing a severe drop in yield for the late planting dates. Contrasted to this, Flambeau, a medium early strain in Minnesota, yielded 29 bushels, 31 bushels and 21 bushels, respectively, for the same three planting dates, behaving in Minnesota as the medium early strains did in Illinois. Botham and Swallers at North Dakota obtained the same results; their early varieties dropped less in yield than did their late strains for a 2 weeks' delay in planting.

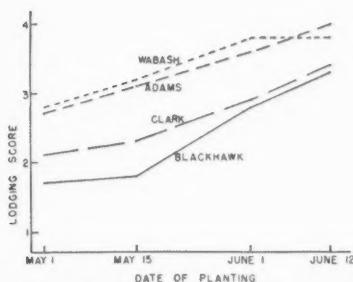


Figure 5. Relation of planting date to lodging score for four soybean varieties, Urbana, Ill., 1951-52.

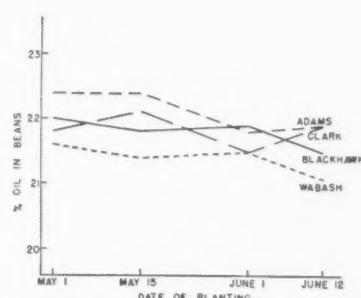


Figure 6. Relation of planting date to oil content of beans for four soybean varieties, Urbana, Ill., 1951-52.

Effect on Height

Height of plant is not affected by planting date to the same extent as are maturity and yield. In the 1950-52 study at Urbana (figure 4), the plants were substantially the same height at maturity for the May 15 planting compared to the May 1 date, with small but significant decreases for the June 1 and June 12 dates. Beans were the tallest from the second date of planting in Minnesota tests and in earlier studies at the Indiana, Illinois, and Iowa stations.

Effect on Lodging

Lodging, or the amount of leaning or down plants at harvest time, can be very important to producers, especially if the lodging is so severe that combine losses are high or the field has to be cut in one direction only. Soybean varieties differ greatly in their lodging susceptibility; also, the tendency for beans to lodge is affected to a great degree by the type of season, and by location and fertility level of the soil.

In the date-of-planting studies, lodging notes were taken at maturity and recorded on a score basis, with 1 indicating nearly all the plants erect, and 5 indicating nearly all plants down. In the 1940-42 study, using five varieties, five dates of planting, and 3 years at three locations, there was only a little indication of more lodging for later dates for planting. In studies at Urbana 10 years later, using different varieties, delay in planting was directly associated with degree of lodging (figure 5), the lodging for some varieties being severe for the latest planting date. The Minnesota study conducted during the same seasons showed a tendency for more lodging at the intermediate planting date, though none so severe as to cause difficulty in harvesting.

Effect on Seed Quality

Quality of the seed affects the market value of the crop sold for

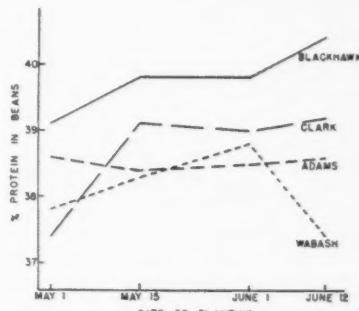


Figure 7. Relation of planting date to protein content of beans for four soybean varieties, Urbana, Ill., 1951-52.

Soybeans will tolerate more cold than corn and may be planted earlier.

processing and the viability of the beans which are kept for planting. In the southern part of the North Central region, it is a general rule, especially with varieties that are early for a locality, that delayed planting gives better seed quality. This is because when a variety that is normally too early for a particular area is planted at an early date it tends to mature in the summer when temperatures are warm and the air is humid, a condition that frequently causes poor seed formation and deterioration of the seed inside the pod. Warm rains are especially bad on seed quality, and under severe conditions cause the beans to sprout in the pod. Very high temperatures under dry conditions can also result in poor seed quality. If the same variety is planted later in the spring it will mature somewhat later in the fall, when temperatures normally tend to be cooler and more favorable for good seed quality.

In a date-of-planting study in southeastern Missouri, C. V. Feaster found the poorest quality seed to be produced on the earliest variety in his test, planted at the earliest date (Apr. 20), but excellent seed for the same variety when planted after June 20. The latest maturing strain in his test produced good quality seed when planted at any time from Apr. 20 to July 10.

An exception to this general rule is when late maturing varieties are planted so late they are caught by frost before reaching maturity. The beans may then be green and shriveled, showing damage that adversely affects the oil quality, imparting a green color hard to remove and resulting in a high refining loss.

Effect on Oil

From the standpoint of industrial utilization, oil is at present the most important component of the soybean seed, thus much interest is centered in the effect of environment on this character. Recent studies have shown that air temperature during the period from 4 to 7 weeks before maturity is positively associated with oil in the bean. Under controlled conditions, an increase in day temperature from 70° F. to 85° F. during this period resulted in beans with a 2% higher oil content. This temperature effect explains to a great extent the variation from season to season in the oil content of the soybean crop.

Some date-of-planting tests have shown little effect of date on soil

content, especially for early strains that had substantially completed development before the start of cooler fall temperatures. Full season strains, in most tests, have shown a steady decline in oil content with delay in planting. Results at Urbana, Ill., for four varieties over a 2-year period are shown in figure 6, and indicate an average decline of .5% oil for a 6-weeks' delay in planting. In Minnesota studies, where cool temperatures occur earlier in the fall, there was a fairly steady decline in oil content, amounting to an average drop of 3% for a month's delay in planting.

Effect on Iodine Number

Iodine number of soybean oil (a measure of drying quality of the oil) is influenced inversely by the temperature at the time oil is being laid down in the seed; the warmer the season the lower the iodine number of the oil, and the cooler the season the higher the iodine number.

As might be expected, some date-of-planting tests in the Midwest have shown an increase in iodine number of the oil for delay in planting, with its consequent filling of the seed in cooler weather. The 1940-42 study at three locations showed little effect from delayed planting in Iowa but an increase of nearly four units in iodine number for 6-weeks' delay in planting in Indiana. Illinois date-of-planting studies 10 years later showed substantially no effect. At the same time Minnesota found a consistent increase of two units in iodine number for 1-month's delay in planting. Studies have shown that this influence on drying quality of the oil may be accounted for through seasonal temperature differences at the time the oil is being metabolized in the seed.

Effect on Protein

Soybean protein is important because of its high nutritive value for food and feed, and because on a dry weight basis it represents about 40% to 45% of the weight of the seed. In general, protein and oil content of soybean seed are varietal characteristics that are strongly influenced by environmental conditions. The conditions responsible for high protein content tend to produce low oil content.

Studies under a controlled environment have indicated that this relationship may not be so pronounced for effects due to tempera-

ture, where high temperatures during the seed filling period give high oil, but have shown a less pronounced effect on protein levels. In the 1940-42 date-of-planting studies at three locations in the soybean belt, while the mean protein content of the varieties ranged from 40% to 45%, the average difference due to planting date was only .2%. Studies in Illinois and Minnesota 10 years later showed the same lack of any appreciable effect of planting date on protein content.

The Best Time to Plant

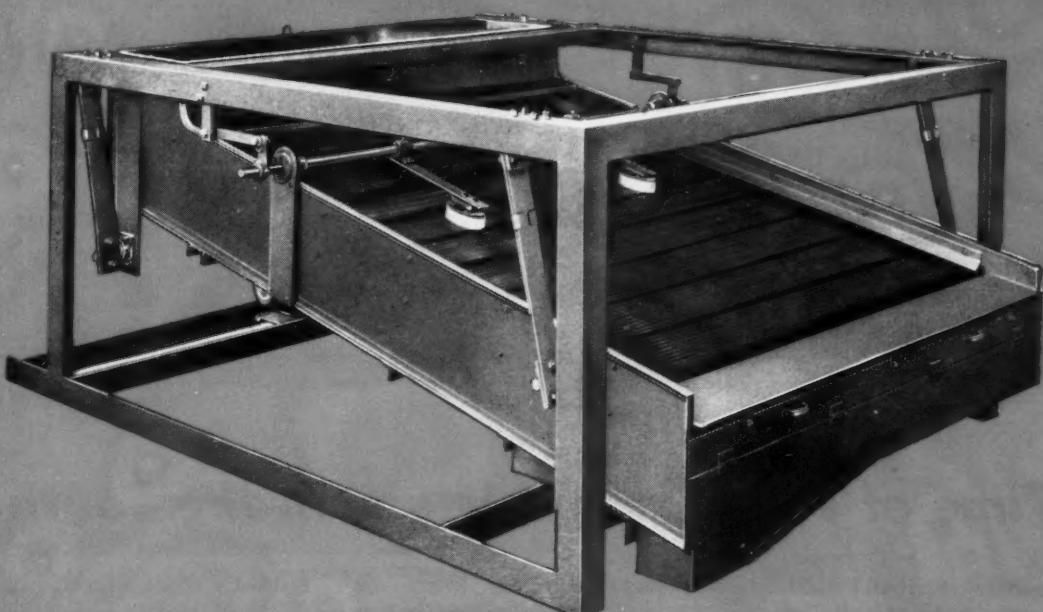
In the northern part of the United States, few soybeans are planted before the first week in May. Prior to that date the soil is usually too cool for prompt germination, and also there is danger of damage by frost. Experience has shown that soybeans will tolerate more cold than corn, and thus they may be planted a little earlier, if for some reason this is found desirable and if the hazard from weeds is not too great. If planting is delayed until the soil is warmer the soybean plant grows more rapidly, providing better weed control. This also provides time for another crop of weeds to germinate and be killed before the soybeans are planted.

As an optimum planting date for soybeans, agronomists are generally suggesting for the northern part of the Northern States the period May 15 to June 1, for the central part May 10 to June 5, and for the southern part of the Northern States the dates May 1 to June 10. Soybeans can tolerate a wider range in planting date than many crops, including corn, and still produce a good yield in a normal season.

Date-of-planting studies have shown that early maturity can be obtained by planting early maturing varieties at an early date; whereas the early planting of full season varieties results in advancing maturity by only a few days. If, for some reason, planting is delayed beyond the recommended planting dates, an early strain for the locality should be used in the northern part of the Northern States, a medium maturing strain in the central part, while a full season strain may still be used in the more southern part of the region.

If soybeans are to be followed by winter grain, a full season variety should not be used but a sufficiently early maturing strain chosen so that the bean crop may be combined ahead of grain planting time.

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GENERAL VIEW of time-of-planting study at Stoneville, Miss. Beans at left foreground planted Apr. 20, in right foreground planted June 1 and in left rear planted May 10. The Lee variety planted June 1 will usually produce a higher seed yield than when planted Apr. 20 and can more easily be kept free from weeds.

Time of Planting Soybeans in the South

By EDGAR E. HARTWIG*

PLANTING DATE is one of the most critical factors in production of soybeans in the Southern states. The soybean has long been recognized as a plant sensitive to day length. With only 12 hours of daylight, nearly all varieties begin flowering 21 to 28 days after emergence. With long days, the soybean plant continues to make vegetative growth and under field conditions starts to flower when the period of daylight has been shortened below a critical level. The critical level for flowering is specific for each variety and determines in part its area of adaptation and time of maturity. Adapted southern varieties flower too early to make maximum growth at day lengths less than $14\frac{1}{2}$ hours.

At Stoneville, Miss., a day length of $14\frac{1}{2}$ hours is reached in early May. In the Gulf Coast area of southern Alabama and western Florida, a $14\frac{1}{2}$ -hour day is not reached until mid-May. The approximate date at which a $14\frac{1}{2}$ -hour day is reached at several southern locations is illustrated in Table 1.

Table 1. APPROXIMATE DATE IN THE SPRING AT WHICH THE DAY LENGTH REACHES $14\frac{1}{2}$ HOURS IN DIFFERENT LOCALITIES IN THE SOUTH.

Location	Date
Warsaw, Va.	Apr. 24
Blytheville, Ark.	Apr. 25
Plymouth, N. C.	Apr. 26
Memphis, Tenn.	Apr. 28
Florence, S. C.	May 3
Stoneville, Miss.	May 5
St. Joseph, La.	May 8
Tifton, Ga.	May 10
Mobile, Ala.	May 15
Miami, Fla.	June 10

In addition to day length, soil temperature also influences the time at which soybeans can be planted. Studies have been conducted which demonstrate that soybeans emerge and grow much more rapidly when the minimum soil temperature has reached or exceeds 65° . At Stoneville, soybeans planted in early April, when the soil is cold, require 12 to 14 days from planting to emergence. Plantings made after the soil has warmed to 65° will emerge in 5 to 7 days. At Stoneville, the soil has

reached a minimum temperature of 65° by about May 1. Consequently the day length and soil temperature are both satisfactory for planting soybeans in early May.

Soil Warms First

In more southern areas, the soil will always be warm enough for planting before the proper day length is reached. However, in more northern sections of the southern region, soil temperature may be the delaying factor in determining planting date.

Rapid growth of soybean seedlings
(Continued on Page 19)

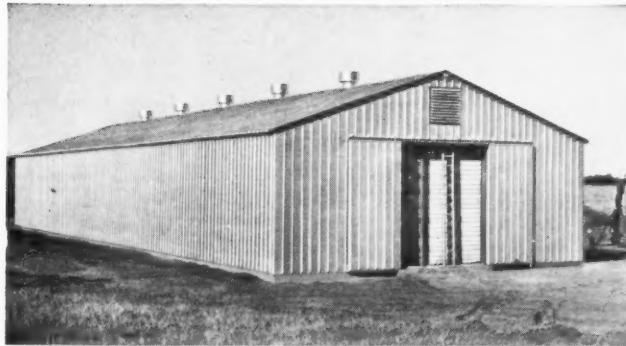


Figure 1. Extremely short growth of the Ogden variety planted Apr. 15 at Walnut Hill in west Florida.

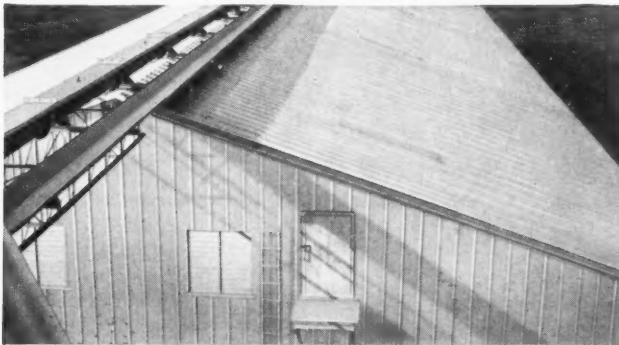


Figure 2. Ogden planted June 1 at Walnut Hill in west Florida. Note increased height over Apr. 15 planting.

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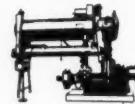
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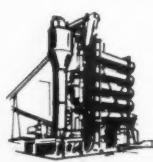
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Figure 3. Jackson planted Apr. 15 at Walnut Hill, Fla. Photographed Aug. 3. Stick is 38 inches in length.



Figure 4. Jackson planted May 15 at Walnut Hill, Fla. Photographed Aug. 3. Stick is barely visible.



Figure 5. Jackson planted June 15 at Walnut Hill, Fla. Photographed Aug. 3.

is of considerable value in early season weed control. At Stoneville, early plantings emerge slowly, which permits some weeds and grasses to get established ahead of the soybeans. In addition to emerging more slowly, the plantings made during the period of Apr. 10 to 20 grow more slowly. Six weeks after emergence they have made only 60% as much growth as the early May plantings make in their first 6 weeks of growth. This rapid early growth aids appreciably in controlling weeds in soybean fields.

The influence on time of planting on total growth and rate of growth in west Florida is illustrated in Figures 1 through 5. Figures 1 and 2 show the difference in mature height of Ogden when planted Apr. 15 and June 1. In addition to a reduced yield, the cutter bar loss would be severe when harvesting Ogden planted Apr. 15. Figures 3, 4, and 5 illustrate the growth of the Jackson variety on Aug. 3 from plantings made Apr. 15, May 15, and June 15. Both the May 15 and June 15 plantings will usually produce higher yields than will the Apr. 15 planting. The June 15 planting has completely shaded the row middles of 38-inch rows in less than 6 weeks after planting.

At Stoneville, adapted varieties such as Dorman, Lee, and Jackson will nearly always produce higher seed yields when planted June 1 than when planted Apr. 20. This is hard for many people to realize when they compare the growth of their April plantings with seedlings just emerging in early June.

Varieties such as Lee and Jackson will produce highest yields from plantings at Stoneville made during the period May 1 to June 1. There is a gradual decline in yield as plantings are delayed. By June 20, a yield of 85% to 90% of the early May yield can be expected. Yield potential drops more rapidly after this date. Plantings made after July 5 are frequently hazardous. When extremely late plantings are made, it is important that the soil be well supplied with moisture so as to permit rapid emergence and growth.

Early maturing varieties such as Perry and Dorman have a narrower range of satisfactory planting dates than do Lee and Jackson. A variety of Perry maturity should not be planted much later than May 20, while Dorman should not be planted later than June 1. The length of growing season for Jackson, a late variety, planted June 20 is comparable to that of early varieties such as Clark or Perry planted May 1 at Stoneville.

Factors in Maturity

Soybean maturity is influenced by response to day length, temperature, and moisture conditions. As indicated earlier, the maturity date of late-maturing varieties is influenced only slightly by time of planting. In studies conducted at Stoneville over a 3-year period, the average maturity date of Roanoke was delayed only 5 days by delaying planting from Apr. 10 to June 20—a difference of 72 days. At more southern locations, this difference will be reduced further. Roanoke is comparable in maturity to the Jackson

variety and 7 to 10 days later than Lee.

Best seed quality is usually produced by most varieties from plantings made during the period which give highest yields. At Stoneville, May plantings nearly always give better quality seed than do April plantings.

Insect problems are greater in the extreme southern locations than in the more northern locations. Although plantings in the Gulf Coast area made during the period May 15 to June 15 usually show little difference in yield if insects are controlled, the insect hazards are usually greater in the earlier planting than in the later planting.

The hazards of drouth stress are also reduced by planting in the later range of the period which will give top yields. In the Delta area of Mississippi, April plantings, which begin drawing on subsoil moisture at an earlier date, always suffer more severely from an August drouth than do mid-May plantings. The later plantings, which have gone through an August drouth in better shape, will then be able to respond to September rains and lower night temperatures.

One of the major requirements for successful soybean production in the South is for growers to realize that the soybean has specific requirements for successful production, which in many cases are different from the requirements of other commonly grown crop plants. One of the major factors in which the soybean differs from other crops is in its sensitive reaction to day length.

Soy Food (MPF) Offers Challenge to World Hunger

Meals for Millions Foundation proposes international conference to review the problem of world hunger

By M. M. ABRAHAMS

Brazilian representative for Meals for Millions Foundation

THE COMMUNIST Internationale begins with the challenge: "Arise ye prisoners of starvation . . ."

The Meals for Millions Foundation program, using MPF (Multi-Purpose Food), is an answer of free enterprise and free men to that challenge.

This program, which makes use of the scientifically developed dietary soybean product of the California Institute of Technology as its vehicle, is not just another do-good program.

The program of the Meals for Millions Foundation does that kind of good. But this is merely a part of a much larger purpose that has animated the Foundation's 11-year efforts, efforts that are completely unendowed and without government aid, but supported by the penny-power contributions of thousands of free Americans.

The larger aims of the Foundation's program and product such as creating good will for the United States and relieving starvation were recognized in the two awards the Foundation received in 1956 and 1957 from Freedoms Foundation. These aims are evidenced by the collaboration now being accorded by such agencies as USIA, ICA, FAO, UNICEF and the President's People-to-People program.

Good nutrition is the indispensable basis of human productivity and progress. If you doubt that, ask any enlightened personnel manager or doctor, especially abroad. Or ask Mr. Herbert Hoover.

For the so-called hard headed businessman this program should be extremely interesting because of its self help feature. Only self help offers any hope of getting the increasing load of human misery off the backs of U.S. taxpayers.

And for soybean farmers and processors, for equipment manufacturers and others, this program has special additional attractions in the

sales opportunities the expansion of this program should provide.

Synergistic Action

Thirteen years ago, Dr. Henry Borsook, professor of biochemistry at the California Institute of Technology, developed MPF for the program adopted by the Meals for Millions Foundation when it was incorporated in 1946.

More than 95% of its bulk is soybean grits. Vitamins and other nutrients are added on the basis of Dr. Borsook's Caltech formula.

Even small quantities of this soybean product are extraordinarily efficacious. As little as a quarter of an ounce per day costing substantially less than 1¢ so vitalizes an otherwise poor diet that it actually requires less food to do a better nutritional job. The improved qual-

ity of food thus enriched, reduces the quantity of food desired—food that without this enrichment is inadequate even to satisfy hunger, much less improve resistance to disease.

The scientific explanation for this is "synergistic action." This means that MPF provides not only its own concentrated protein, vitamin and mineral values but, in addition, increases substantially the biological value of the food to which it is added, even in very small quantities. Thus, the wheat, corn, rice or mandioca, one or the other of which is the principal basis of the marginal subsistence of hundreds of millions of people, can be converted from a poor diet to a relatively rich one.

Proofs are legion. Let's focus on two of the more recent.

(Continued on page 22)



BEFORE. These six malnourished babies were admitted to the American hospital, Pago Pago, Samoa, by Dr. James R. Dean, public health officer.



AFTER. Same babies as in first picture after 6 months diet of Multi-Purpose Food. All showed gains of weight into the normal range. All showed improvement in motor response and bodily tone.

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soybean
field is the
cleanest
it's
ever been"
—says
prominent grower*

SOYBEAN YIELD WAY UP!

Note clean, weed-free rows at right, thanks to
ALANAP-3. Untreated area at left is weed-choked



Naugatuck's files are beginning to bulge with letters from growers attesting to the efficiency of Alanap®-3. This only proves what extensive field usage has long shown—Alanap-3 kills weeds as they begin to sprout and before they emerge.

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*From correspondence files



United States Rubber
Naugatuck Chemical Division
Naugatuck, Connecticut

producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Sperton, Phygon, Aramite, Synclor, MM, Alanap, Duraset.

Productivity per Man-Hour

Example No. 1. Two groups of 20 men each of Sao Paulo factory workers were relatively a physical elite, which they had to be for employment in the tire building department. They had had the advantage for some previous time of the usual factory meal. This, even by U.S. standards, was not only ample and good but one of the best being served anywhere by any American company at home or abroad.

One group received its MPF as a porridge before the beginning of the shift. Its relative production rate improved, but the average weight of the men declined between the beginning and end of the 2-month experimental period.

Another group, on the other hand, received its MPF supplement of 22.5 grams with the factory meal, the same factory meal that was served the first group. The group that received its MPF with the meal, however, registered a more dramatic increase in relative production rate—to a level of about 10% above that of the control group. It also gained an average of more than 2.5 pounds per man.

What is of special statistical significance is that the average loss of the men of the first group and the average gain of the men of the second group were not average of pluses and minuses. *All of the men of the first group lost weight and all of the men who received MPF with their meal gained weight.*

The MPF supplement of itself provided less than 60 calories. One group received the full benefit of the synergistic action by having its MPF with the factory meal. The other group did not.

Example No. 2. This is perhaps even more conclusive in establishing the extraordinary synergistic value of MPF.

Miss Gladys Oberlin, the American nutritionist-directress of Instituto Ana Gonzaga, a Methodist missionary school in Rio de Janeiro, had heard laudatory reports on MPF but was hesitant about trying it for fear that the lesser volume of food that her stringent food budget would impose might result in even more frequent complaints by the girls that their meals were not satisfying their hunger. Miss Oberlin was persuaded to try MPF because of the health benefits that had already been reported to her by other individual and institutional users.

All of the 200 girls of the school boarded there. And it must be noted

that their meals were the simple rice-and-beans for lunch and for dinner that is the standard diet in Brazil for all but the well-to-do.

At the end of 3 months Miss Oberlin reported:

1—That the rice consumption of the group had decreased by 3 kilos, 6.6 pounds per meal.

2—That the monthly bean consumption had dropped from the previous average of nine to only seven bags of 132 pounds per bag.

3—That, due to the lessened demand for quantity, with all complaints of hunger ceasing, it had actually cost less to feed the girls with the MPF than it had been costing without it. And—what had almost never happened before—the infirmary was vacant for several consecutive days. A month later Miss Oberlin wrote to say with amazement that the infirmary was still vacant!

What makes this report especially interesting as evidence of the synergistic action of MPF is that the *average total daily amount of MPF that each girl received was only a little more than 1/4 ounce!*

To us laymen this seems like magic. But to the biochemists, doctors, biologists and nutritionists aware of the tremendous strides in 20th century knowledge, this kind of proof of synergistic action is almost old hat.

Any layman—especially a taxpaying layman—may well ask why in the world this kind of knowledge, this kind of power, is not being put to work fast on a worldwide scale.

The answer to such an obvious question is complex. It involves among many other things disturbance of the powers that be, sometimes incurable skepticism, too many adherents to the "Let-George-do-it" school of thought, or just plain ignorance of what can be done.

An International Meeting for Practical Action

The knowledge nutritional research has gained in recent years has established conclusively that the world's farms and factories already have the nutritional resources to feed and nourish all the people of the world, to abolish malnutrition, to reduce disease—90% of which is attributable to nutritional deficiencies, many doctors say—and to improve the physical and mental efficiency on which the progress of any civilization depends.

This is the conviction on which the Foundation has operated.

But tremendous acceleration could



APPROVAL to Meals for Millions Affiliate program in his state is given by Governor Janio Quadros of the state of Sao Paulo, Brazil. At right is Maurice M. Abrahams of Meals for Millions Foundation, Brazil.

be given to its program by supplementing its private activities and those of FAO, UNICEF and individual governments with the infinitely greater and more efficient power of private industry and private capital.

The proposal of the Foundation is to call an international conference that would include the ministers of food, health, agriculture and finance or their representatives on a policy making level in every interested country. The purpose of the conference would be to accomplish the following:

1—To review the nature of the resources each participating country possesses for producing MPF-type foods. These foods would be produced preferably with soybean material where available. It provides the best and most economical source of the kind of protein required.

2—To permit the private economy of the United States — including farmers, soybean processors, manufacturers and others — to know the needs of these countries for the manufacture of this amazing food supplement. And, by direct contact with their respective finance ministers, to offer to fill these needs on a business basis by export of soybeans or of processed soy products, equipment, know-how and private capital.

The Foundation has already demonstrated that this kind of approach is workable. The rate at which it can be done can be enormously accelerated by such an international meeting—private and governmental—including such agencies as are concerned with this problem in the United Nations. Together, these forces can solve this world problem of the first magnitude.

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New Guides Show Possible Illinois Soybean Yields

Here are the potential yields you can expect through top management

By L. J. MCKENZIE
and
HAROLD D. GUTHIER

University of Illinois

ILLINOIS soybean growers can now tell what yields they should expect from their kind of soil if they do a top job of management. By knowing what to expect, these farmers can set a realistic goal and feel reasonably sure of making it over a period of years.

The new potential soil productivity guides were developed for Illinois soils by checking experiences of farmers over the past 25 years as shown in records of the Farm Bureau Farm Management Service, and the yield records from the soil experiment fields located around the state on a variety of soils. By combining the figures from the past 10-12 years, potential crop yields were calculated for soybeans, as well as corn, oats, wheat and hay.

Whatever way a soybean grower manages his soils, the potential yields will show what he can expect to produce. If he does a top management job, the yield potential will give him a goal to shoot for. The records indicate that he can reasonably expect to make this goal.

The state was divided into five major soil areas. In general the soils in each area have similar productivity, management problems and fertilizer response. These areas are shown on the map. The potential yields are given for the most extensive soils in each area. Potential yields for Area V are not yet available because of limited information from this area on soybean yields.

Any farmer in Illinois can find what soils he has on his farm by consulting his county farm adviser or local Soil Conservation Service personnel.

Now let's see how the soil production potentials work out for soybeans. Suppose a central Illinois soybean grower has mostly Muscatine silt loam on his farm. Even with no soil treatment of any kind, his po-

tential yield will be around 29 bushels. But Muscatine soils with really top management can do better.

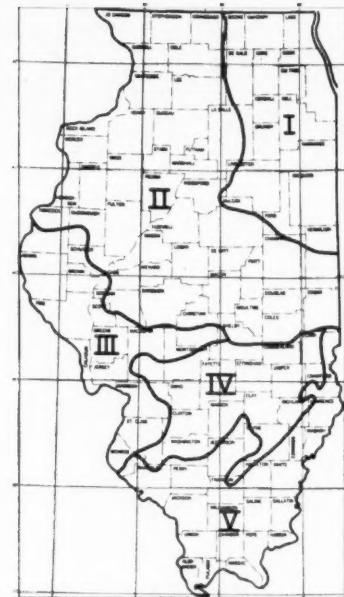
By applying phosphorus, potash, and lime according to soil tests, following good rotations, supplying manure or crop residues to the land and improving drainage where necessary, this soil is capable of producing around 40 bushels to the acre. So on Muscatine silt loam, with a potential for high yields, a farmer knows that good management practices will pay off.

Now suppose a farm in Area II is mostly Alvin sandy loam. Without treatment, the operator of this farm could expect a return of only about 23 bushels to the acre. If he applied a moderate amount of lime and phosphate, he could raise his potential yields to about 29 bushels.

But with the very best management practices as we described above, this soil is capable of producing only about 30 bushels an acre. Therefore a soybean grower should plan his soil management program accordingly.

The potential yield figures mentioned here are the average yields a farmer can expect over a long period of years. In any one year, they could be from 20% above to 20% below the yield potential. And in about one year out of three, they could even fall outside this range. This variability is caused primarily by weather. But over a 10-year period, they will work out as figured.

A similar picture of potentially top soybean yields through top management can also be shown for areas I, III, and IV. Yield potentials for top management will probably not remain stationary. In the future they could be higher as we learn more about how to do a better job of soil management.



POTENTIAL ILLINOIS SOYBEAN YIELDS WITH TOP MANAGEMENT

Soil area	Bushels
Area I	27-40
Area II	30-40
Area III	30-39
Area IV	22-35
Area V (Potential yields not yet available)	

BROAD SOIL REGIONS DIFFERING IN GENERAL PRODUCTIVITY

- I. Predominantly dark colored soils developed from glacial till and outwash.
- II. Predominantly dark colored soils developed from medium to thick loess.
- III. Moderately dark and light colored soils developed from loess over strongly weathered till.
- IV. Moderately light and light colored soils developed from thin loess over strongly weathered till.
- V. Predominantly light colored soils developed from thin to moderately thick loess on bedrock or weathered till.

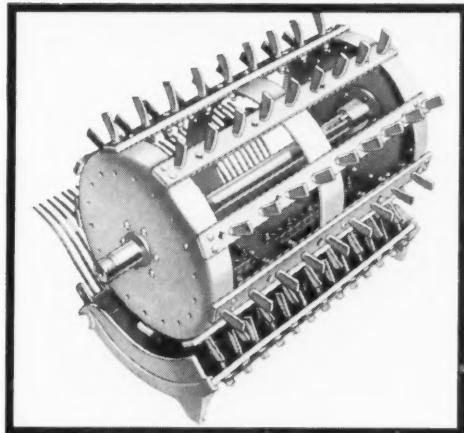
Cold Weather Steps up Meal Demand in U. K.

COLD SPRING WEATHER in the United Kingdom has stepped up demand for vegetable cake and meals, reports USDA's Foreign Agricultural Service. Many processors are unable to meet this demand.

The shortage of cake and meal is reportedly due, in part, to the fact that the U.S.S.R. has not been able to make deliveries in accordance with contracts signed several weeks ago. According to trade circles, the U.S.S.R. has requested extension of delivery time. Moreover, it is said that only some 7,700 short tons have been delivered; the total quantity contracted was 22,000 tons.

Part of the shortage in cake and meal supplies may be met by a recent purchase of Manchurian soybeans from Communist China. While the contract called for early delivery, the quantity involved has not been announced.

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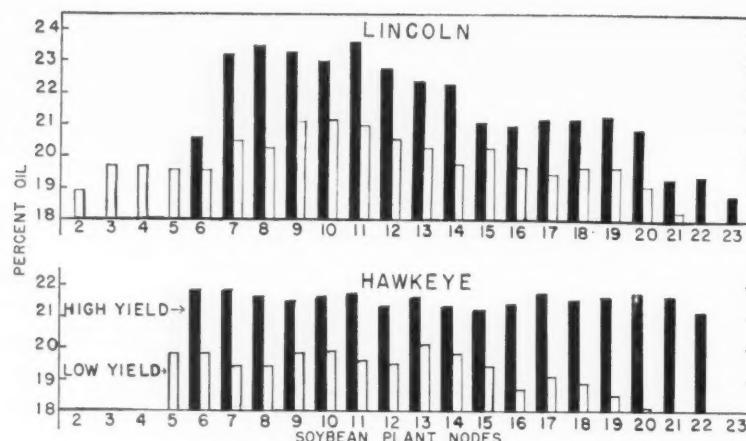
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Name Student

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OIL CONTENT of high and low yielding soybean plants by nodes for the varieties Lincoln and Hawkeye.

Breeding for Oil Content

By F. I. COLLINS

Chemist, U. S. Regional Soybean Laboratory
From University of Illinois Agronomy Facts

IN BREEDING soybean varieties for improved industrial value, the method of taking chemical samples from portions of a single plant or from plants within a nursery plot is important. Soybean seed from different parts of plants of several varieties and types have been analyzed for oil content and other characteristics to determine how composition varies within the plant and between plants.

Seeds from the lower half of Lincoln soybean plants have been found to contain about one-half percent more oil and 1% less protein than those from the upper half. This is characteristic of varieties of indeterminate growth type, such as Lincoln and Earlyana. Seeds from the terminal node may contain as much as 6% less oil than those from nodes in the bottom half of the plant.

Plants of determinate varieties, such as Hawkeye and Richland, have a narrow range in oil content. Seeds from the terminal nodes of these plants have only 1% to 2% less oil than the highest ones found on the plant. One variety, Jorgen, produced the highest oil content in seeds from the terminal raceme. This characteristic has not been observed in any other variety.

Despite variability between nodes, all plants of one variety are similar in pattern of oil content. The distribution of oil in the seeds on branches is similar to that on the

main stem. Seeds produced near the tip of a long raceme have a lower oil content than those produced farther down. The seed in the tip position in the pod has the highest oil and lowest protein content, but the difference within pods is not very large.

Seeds produced on the upper nodes of a plant are generally smaller than

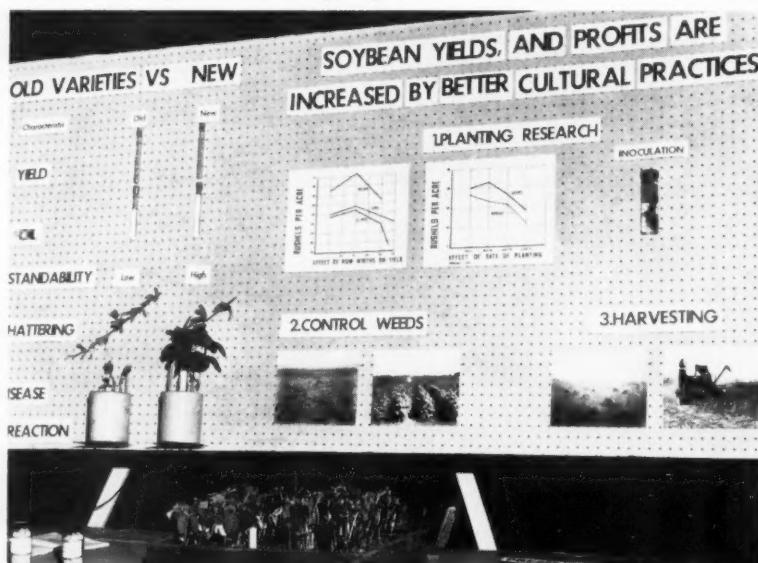
those on the central and lower portions. In three-seeded pods, the heaviest seed is in the middle. The location of pods on the plant has a much greater influence on size of the seed and its chemical composition than position of the seed in the pod.

In all varieties of soybeans, the oil content of seeds from different nodes of a single plant varies substantially. Furthermore, the high-yielding plants within a drilled row produce seed with a higher oil content than the low-yielding plants. (See graph at left.) Selection of single plants for genetically high oil content of their seeds from a segregating population should be made only on plants with comparable yields and grown under similar environmental conditions. Disregarding these variations in plants will reduce the effectiveness of selection procedures based on chemical analysis.

Form Brazil Company To Process Soybeans

SOCIEDADE BRASILEIRA Agro-Industrial Ltda., recently formed by the Japanese Niso Co. and some farmers of Ourinhos, Sao Paulo, Brazil, plans to produce semi-drying vegetable oils from soybeans, peanuts, and corn, as well as meal and oilcake, reports USDA's Foreign Agricultural Service.

Illinois Soybean Display



SOYBEAN IN ILLINOIS was recently portrayed by a panoramic exhibit, part of which is shown above, at the University of Illinois. The occasion was the University's first Farm and Home Festival. History and development of Illinois soybeans were shown in this exhibit. Viewers learned how research has been used to improve breeding techniques, growing practices and harvesting methods. They saw the actual process of hybridization used to develop new varieties. Six major exhibit areas at the Festival portrayed science in action, showed the "exciting results of research and the painstaking methods used by scientists in producing these results."

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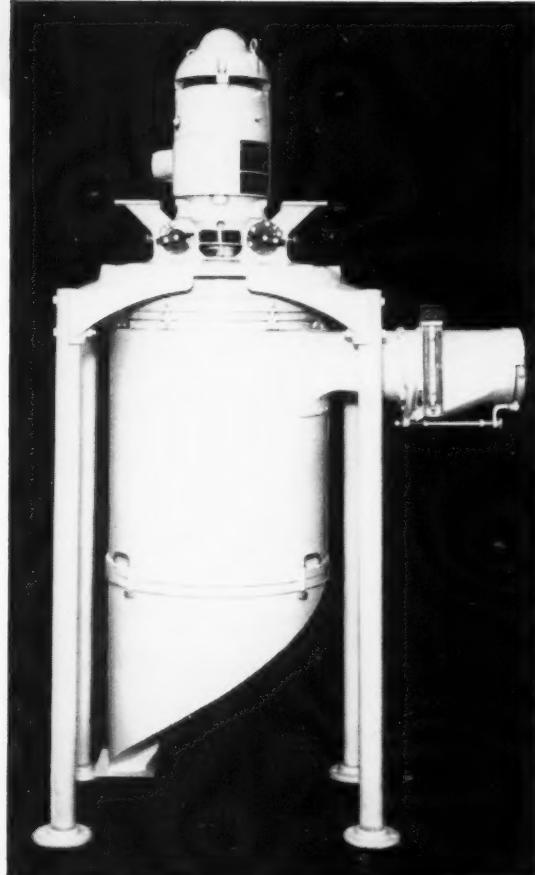
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USDA Sends Feed Survey Team to Europe

A USDA survey team has recently arrived in Rome to investigate the possibilities for future markets for U. S. feed grains in Western Europe.

The team is composed of John J. McCracken of the Foreign Agricultural Service's grain and feed division, and two representatives of the National Federation of Grain Cooperatives—Fred Maywald, manager of the grain department, Farmers' Grain Dealers Association of Iowa, and Dr. Max Jeter, director of products research, Indiana Farm Bureau Cooperative Association.

The market promotion survey is jointly sponsored by USDA's Foreign Agricultural Service and the National Federation of Grain Cooperatives to study the immediate and long range sales of U. S. high protein meals and grains in Italy, West Germany, and Greece, with a view to developing permanent dollar markets in Europe for U. S. feed grains exports.

The survey team is conferring with U. S. agricultural attaches, and feed manufacturers, merchants and users in Italy, West Germany and Greece regarding possible market develop-

ment activities. These may include the sending of Italian, German or Greek trade teams to the United States.

Catron, Jeter Attend Rome Feed Conference

DR. DAMON CATRON, livestock nutritionist of the animal husbandry department, Iowa State College, Ames, and Dr. Max Jeter of the Indiana Farm Bureau Cooperative Association, are attending the annual conference of the Italian Feed Manufacturers Association at Rome May 6 to 9.

May 8 is "soybean day" at the conference. Catron, who was sent by the Soybean Council of America, Inc., will discuss the usage of soybean oil meal in formula feeds. Jeter, a member of the USDA feed survey team, will discuss the incorporation of soybean oil meal into mixed feeds.

Initiate Program to Boost Linseed Oil Use

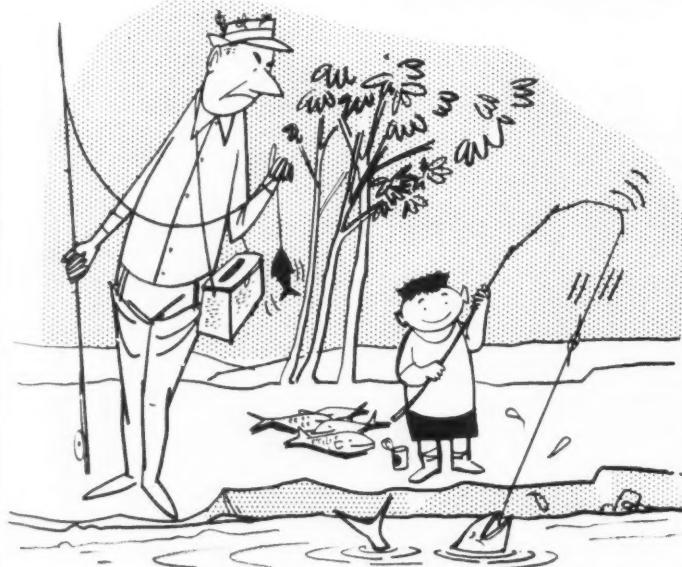
THE NATIONAL Flaxseed Processors Association, initiating an indus-



SURVEY TEAM. (l. to r.) Dr. Max A. Jeter; Clayton E. Whipple, U. S. Agricultural Attaché, Rome; Fred Maywald; John J. McCracken. Seated, Dominic J. Marcello, director for Italy, Soybean Council of America, Inc.

try program to boost use of linseed oil, has named Charles E. Morris of Chicago to a newly-created post of director of research and development.

Morris, a chemist with 28 years in fats and oils, was appointed by NFPA President Fred M. Seed, vice president of Cargill, Inc., in charge of the vegetable oil division.



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Recommend Treatment of Dorman Seed

By H. J. WALTERS

Associate Plant Pathologist, Arkansas Experiment Station

(Reprinted from Arkansas Farm Research)

OF THE total 1957 Arkansas soybean acreage, 10% or 133,800 acres were planted to the Dorman variety. Under field conditions, emergence of seed of Dorman soybeans has been consistently poor as compared to seed of the Lee and Ogden varieties. As a result much interest has been expressed as to the effect of seed treatment on stands of Dorman soybeans.

Tests were designed in 1957 to determine how well several fungicidal chemicals would protect the seed and young seedlings of soybeans. Seeds of Dorman, Dorchsoy 67, and Lee varieties were slurry-treated with Arasan, Captan, and Spergon at the rate of 2 ounces per bushel.

The tests were conducted at Osceola and Stuttgart.

Increased stands resulted from all treatments. The increases in stands ranged from 6% with Lee in the May planting to 65% with Dorman in the April planting. Since the planting at Stuttgart was made when environmental conditions were favorable for emergence of seedlings, no significant increases in stand were obtained.

Increased yields resulted from most treatments. Statistically significant increases in yield were obtained with the Dorman variety and minor increases were obtained with Lee and Dorchsoy 67. Arasan treatments consistently gave higher yields. The yield data are given in the table.

These results show that with seed of good quality planted at standard



UNTREATED seed is shown in row at right. Seed for adjoining rows was slurry treated. Dorman soybeans planted in April.

seeding rates, under environmental conditions that are favorable for emergence of seedlings, little if any benefit can be expected from seed treatment. On the other hand, the combination of poor quality seed and cold, wet weather may result in considerable reduction in stands if seeds are not treated.

Since Dorman soybeans characteristically have a low germination rate, it is recommended that seed of this variety be treated.

SOYBEAN YIELDS IN BUSHELS PER ACRE, 1957

Treatment	Lee	Dorchsoy	Dorman
Osceola, soybeans planted April 11			
Arasan	30.3	31.0	24.1*
Sperton	32.1	24.0	20.2*
Captan	32.5	27.0	22.0*
Check	26.1	25.0	15.9

Osceola, soybeans planted May 7

Arasan	49.6	44.5	37.2*
Sperton	40.6	43.9	34.3*
Captan	49.0	34.8	31.1
Check	49.5	41.1	26.6

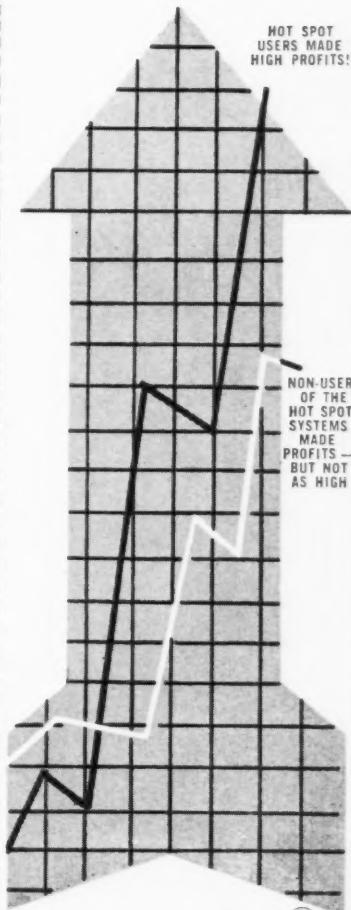
Stuttgart, soybeans planted June 6			
Arasan	41.8	26.7	21.8
Sperton	41.2	27.7	21.8
Captan	41.9	23.9	21.8
Check	36.5	23.0	17.8

* Difference significant at 5% level. ** Difference significant at 1% level.

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Our engineering department will work with you on planning a drying installation geared to your specific needs, whether they be large or small. There is no obligation, and in many cases it has been possible to save owners thousands of dollars. Over a quarter-century of experience is yours for the asking.

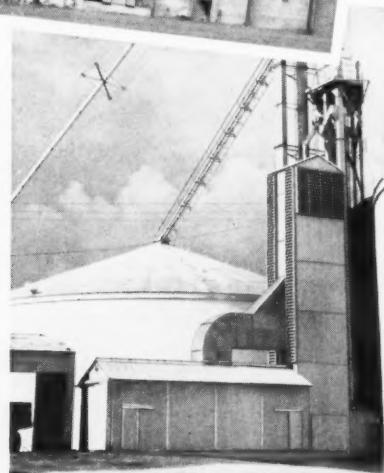
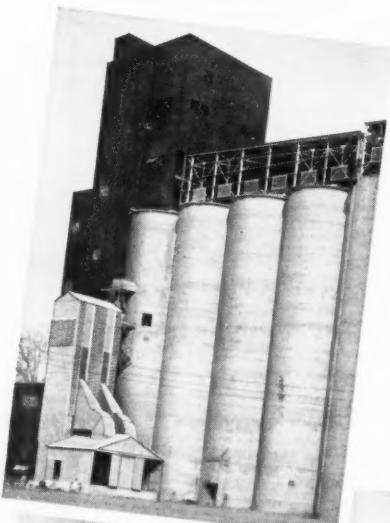
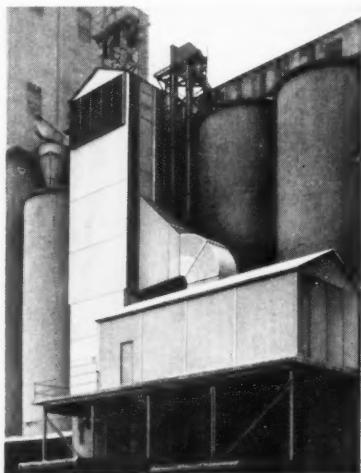
A Shanzer Twin Model 415CE is shown at Central Soya Co., Inc., Chattanooga, Tennessee.

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Shown below are Shanzer installations at: left, The Glidden Company, Chicago, Illinois, Twin Model 515CE; below center, Farmer's Union Grain Terminal Assoc., St. Paul, Minnesota, Model 515CE; below right, Cargill, Inc., Port Allen, Louisiana, Model 501CE.



Charges "Yellow Curtain" Against Margarine Sale

THE CHARGE that Wisconsin maintains a "Yellow Curtain" against the sale of margarine, for the alleged purpose of protecting its butter industry against free competition in the market place, was leveled at Eau Claire, Wis., Apr. 28, by George M. Strayer, executive vice president of the American Soybean Association.

In his remarks at the 58th annual convention of the Wisconsin Retail Food Dealers Association there, Strayer charged that the state's prohibition against the sale of yellow-colored margarine and the taxes it imposes on consumers and handlers of white margarine "represent a Yellow Curtain of discrimination against American farm producers of soybean oil, for whom margarine is the largest single market."

"It is a curtain erected by ignorance and fear, and maintained by a selfish minority interest," Strayer declared. He said that Wisconsin and Minnesota are the only two states that still prohibit yellow margarine.

Recalling his experiences in 1956, when he visited Poland and Czechoslovakia on official business, Strayer remarked that he had seen tangible evidence of the Iron Curtain which separates Russia and her satellites from the Free World countries of Europe. While the trade barrier that has been erected by the state of Wisconsin against margarine is not visible to the naked eye, he noted, it is just as real.

In some respects, Strayer said, it is alarmingly similar. First, the home-maker cannot go to the local grocery store in Wisconsin and buy a pound of yellow margarine. The state says she must buy it white and color it at home.

Second, the law requires that anyone bringing a pound of margarine into the state must apply to the state for a license and must file a written report with the state declaring how many pounds of margarine were brought into the state and paying a tax on each pound, Strayer said.

As in the case of the Eastern European satellites, the result in Wisconsin has been secret violation of the law.

Extensive Soil Checks For Nematode in Missouri

SINCE THE discovery of the soybean cyst nematode in three southeast Missouri counties late in 1956, extensive soil sample checks have been made in 47 other counties in

the state without finding any evidence of the pest's presence, says Stirling Kyd, University of Missouri extension entomologist.

The survey work was conducted primarily by the plant pest control branch of the U.S. Department of Agriculture and the Missouri State Department of Agriculture.

Soil samples were taken from more than 3,400 fields and found to be free of the eel-like worm pest during survey work in 1957. All of the fields sampled had a history of soybean or other host crop production.

Additional survey work is currently planned for the coming growing season, Kyd says. Upon the completion of the planned work, all major soybean-producing counties in the state will have been surveyed for the soybean cyst nematode. Also surveys will be made in many Ozark counties where large acreages of *lespedeza*—also a host crop to the pest—are grown.

Nematode infestations have been found in 77 fields in Pemiscot County, seven fields in New Madrid County and a single field in Stoddard County.



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PTC Offers Equipment to Meet Spoilage Problems

By CHARLES H. BIGELOW, JR.
PTC Cable Co., St. Paul 1, Minn.

THE STRANGEST detective agency in the world is one operated by PTC Cable Co., St. Paul, Minn. Tracking down and giving the death sentence to the most elusive and dangerous criminal in the soybean industry is its job.

The criminal, and inevitable victim of PTC's sleuthing? . . . spoilage! The clue? . . . temperature!

PTC electronic temperature indicating equipment is widely used to prevent spoilage.

Spoilage of soybeans is caused either by excess moisture or by insects, or both. Excess moisture can be anything over 13-14% moisture content of the soybeans, or it can be introduced by leaks in the tanks, condensation, or other means. Grain insects, of course, are found everywhere.

Presence of either excess moisture or insects sooner or later causes the generation of heat. The places where this starts are known as "hot-spots."

Our firm has developed a system to detect these "hot-spots," employing the principles of thermocouples. These thermocouples are spaced at regular intervals, generally 5 feet, within a polyvinyl-chloride, plastic sheath. This, in turn, is enclosed in an improved plowsteel wire rope. Manufacturing is done by the Jones and Laughlin Steel Corp., under license by PTC (Permanent Temperature Control).

Outwardly, the finished product looks exactly like any other 5/16th wire rope. Proper lengths of these PTC thermocouple cables are permanently suspended in the grain storage areas.

The effective reading radius of a thermocouple is 10 feet. So one PTC cable is sufficient for a 20-foot-diameter bin. Installations range from a very few up to hundreds of bins. Three steel tanks holding soybeans in Tennessee are each 70 feet in diameter and each contains 12 PTC cables.

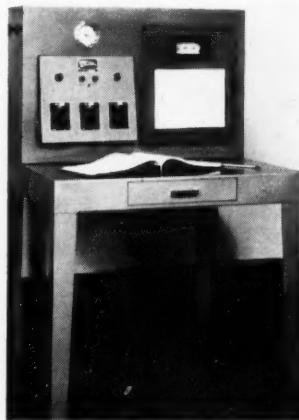
In the presence of such heat, then, each thermocouple generates a minute but specific amount of electricity that varies according to the temperature surrounding it.

Special PTC electronic reading instruments translate these electric impulses into degrees F. Thus, by periodic readings, an operator can tell when and in what part of what bin a "hot-spot" is developing. He does this by comparing the present reading with the written record of the previous one.

In itself, the present temperature readings tell little. It is a sudden rise of 3 or 4 degrees or more that alerts the operator to further action. In this case, the treatments employed are aeration, turning, or fumigating.

PTC Cable Co. became active in this business early in 1953. Sales agents represent PTC from Delaware to California and from Ft. William, Ontario, to New Orleans. Company officers are P. W. Fitzpatrick, C. H. Bigelow, Jr., and W. L. Heitmiller, all of St. Paul. Headquarters are in the Anchor Building, 4th and Robert Streets.

It has been estimated that 5% of all cereal grains is spoiled by insects alone. Excess moisture spoils more than that. PTC not only reduces spoilage, but lowers overhead. Just recently, an Iowa grain man reported that his PTC equipment in its first 4 months saved him a bin of grain worth approximately \$25,000. That is about six times more than he paid for PTC.



PTC ELECTRONIC reading station combines the selector switches and a Fielden electronic temperature indicating instrument. The station can be located wherever most convenient.



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MAY, 1958

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Low Income Countries Key to Exports

EXPANSION of exports of U. S. food fats and oils depends on consumption in the low-income countries of southern Europe, Africa, Asia, Russia and eastern Europe, notes Eric Berg, department of agricultural economics, University of Illinois, Urbana, Ill.

"Per capita consumption of food fats and oils in the high-income countries of northwestern Europe has stabilized," states Dr. Berg. "While

there are variations from country to country, consumption for the region as a whole approximates U. S. consumption, which has also stabilized. Other good customers are Canada, Cuba, and several countries in Latin America.

"The countries of Asia, which have over half of the world's population, have a per capita consumption of less than 10 pounds (compared with

about 45 pounds for the United States and northwestern Europe). Consumption in southern Europe, Latin America, Africa, eastern Europe, and the USSR (which have about one-third of the world's population) is generally less than half as large as that in the United States or northwestern Europe.

"Larger per capita consumption in the low-income countries would widen the export market for U. S. food fats by reducing exports from many low-income countries which in spite of their low consumption are net exporters, and by further increasing imports by several low-income countries that are net importers.

"Consumption of food fats in the low-income countries could be increased by several means. One way would be for the United States to import more goods from these countries and thus give them more dollars with which to buy U. S. fats.

"Larger imports of goods in general by the United States from other countries would be facilitated by lower U. S. import duties, abolition of import quotas, and removal of other impediments.

"The United States might also increase its exports of food fats by helping to increase productivity and thus increase incomes in the low-income countries. Production could be increased through development projects, but this is a slow process. Since fats are a luxury in low-income countries, an easier way to increase exports would be to lower the price so that consumers could afford larger amounts."

U. S. Rubber Develops Plant Tranquilizer

A CHEMICAL tranquilizer for plants has been developed by U. S. Rubber Co. It will be marketed for use on selected crops for the first time this season.

The chemical is called Duraset-20W. It increases plant yields by reducing the effects of shock and stress caused by such conditions as heat spells, sudden cold snaps, prolonged rain, drought or over-fertilization.

Duraset-20W has been tried on soybeans with what is described as "some success." The tests were made on a very limited scale in 1957. This year two universities in the soybean area and one commercial grower are running larger tests. More yield data on soybeans are expected to be available by the end of this season.

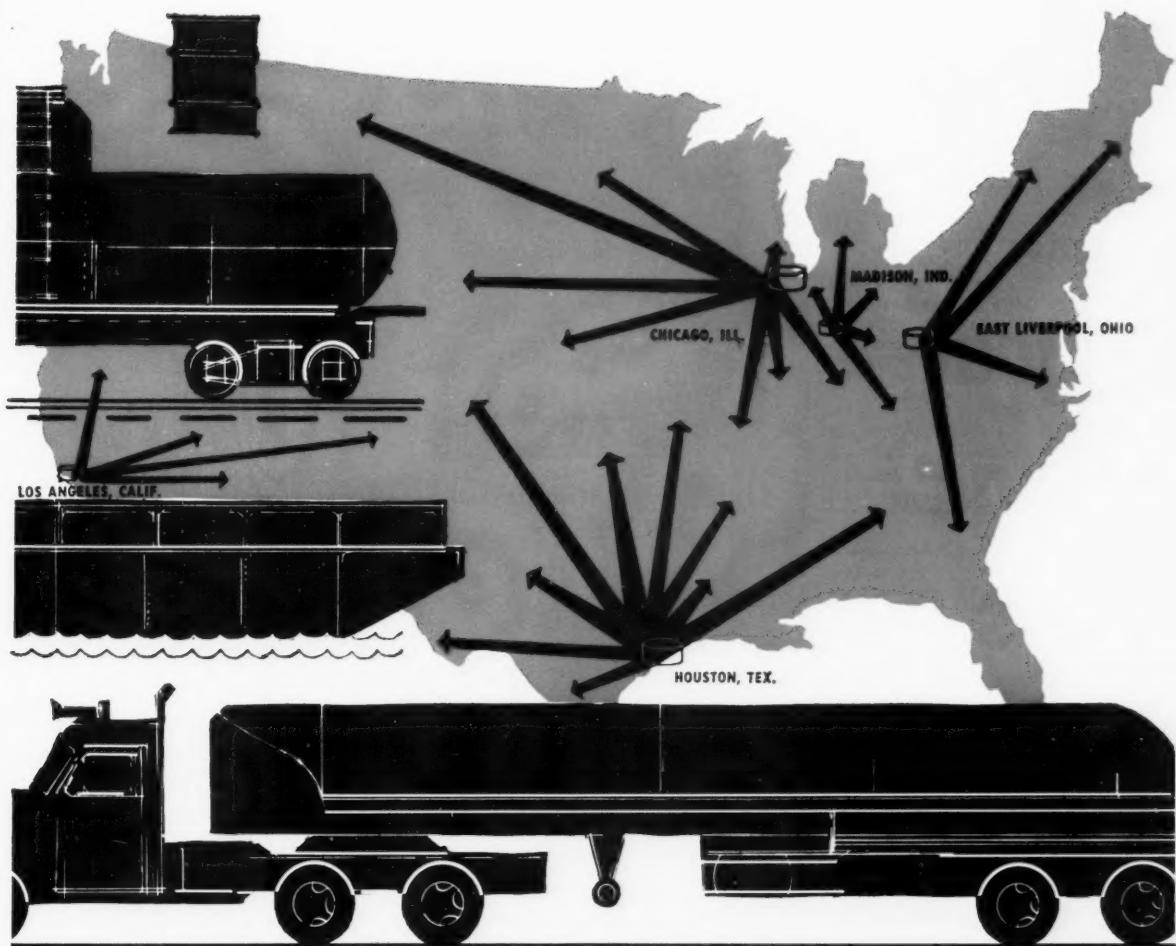
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BOOKS

Chen Writes Book On Heart Disease

PHILIP S. CHEN, the author of *Soybeans for Health, Longevity and Economy*, has written a new book which is of timely interest. The book is *Heart Disease—Cause, Prevention and Recovery*.

Dr. Chen, who is chairman of the division of natural sciences at Atlantic Union College, South Lancaster, Mass., makes a strong case for the use of vegetable oils, particularly the liquid oils, in the prevention of heart disease.

The author says soybean oil is superior in preventing and combating heart disease because of its high content of (1) essential fatty acids, (2) lecithin and (3) sitosterol and other sterols.

But he points out that only crude, unrefined soybean oil contains all these ingredients. The ordinary refined soybean oil contains only the essential fatty acids. Hydrogenated soybean oil does not contain a high level of essential fatty acids. But even so the author considers it superior to lard which is high in cholesterol, thought to be connected with heart disease.

Dr. Chen quotes Dr. Charles J. May in his report to the Council of Foods and Nutrition of the American Medical Association. Dr. May predicts that consumers will in time discard lard and other animal fats which are high in cholesterol and saturated fatty acids in favor of hydrogenated vegetable shortenings and eventually of liquid vegetable oils, such as refined or even crude soybean oil.

Heart Disease—Cause, Prevention, and Recovery. By Philip S. Chen, Ph. D. 190 pages illustrated. Clothbound. \$3. Published by the Chemical Elements. Order through the Soybean Digest, Hudson, Iowa.

Textbook for Southern Agriculture Students

A NEW TEXTBOOK for southern agriculture students is *Crop Production in the South*, issued by John Wiley & Sons.

Written in an easy, readable style and well illustrated, the book appears to cover most southern crops in a comprehensive manner. Part of a chapter is devoted to soybeans. Many others interested in southern agriculture in addition to students

could profit by the book's ownership.

Author is Glenn C. Klingman, professor of field crops at North Carolina State College.

Chapters include a thorough discussion of soil and plant growth, plant breeding, the how and why of good seed, and weed control with details on the various chemicals.

Crop Production in the South. By Glenn C. Klingman. Clothbound. 416 pages illustrated. \$4.95. Order through Soybean Digest, Hudson, Iowa.

LETTERS

Says Farm Organizations Weak on Public Relations

TO THE EDITOR:

I heartily commend you for your remarks on the editorial page of the March issue of the Soybean Digest, "Time to stop the apologies." I sincerely wish you would in some way get this into the hands of our various farm organizations, such as Farm Bureau, etc.

I have plugged for this to be made a public educational program by the Farm Bureau ever since I have been a (dissatisfied) member. There has been such a concerted campaign to make the farmer the "whipping boy" for the high cost of living that I feel almost like apologizing when I admit to a city acquaintance that I am a farmer.

True, you in your magazine and the various other farm magazines and organizations have done a wonderful job of educating the farmers. I never find a farmer who is not sympathetic to our cause. But where we so badly need sympathetic understanding is with the general public who think we are to blame for the high cost of living, big taxes, etc. Yet our farm organizations are doing practically nothing in the way of public relations.

Perhaps a continued effort on your part might help to arouse some others to this very important and seemingly neglected task.—C. P. Montgomery, Lubbock, Texas.

Wealth of Information!

TO THE EDITOR:

Thank you kindly for the copy of the 1958 Soybean Blue Book. What a wealth of information!—H. M. Brown, Assistant Prof. in Farm Crops, Michigan State University, East Lansing, Mich.

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BUTLER MANUFACTURING COMPANY

JAPANESE-AMERICAN SOYBEAN INSTITUTE

Third Year for U. S. at Japan Fair

By SHIZUKA HAYASHI

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan.

THE JAPAN International Trade Fair this year in Osaka opened on Apr. 12 and lasted through Apr. 27. In 1956 the Japanese American Soybean Institute in cooperation with the American Soybean Association for the first time joined the fair in Osaka with Mr. Ersel Walley in charge. In 1957 the International Fair was held in Tokyo in which we again participated with Mr. Walley and Mr. Albert Dimond representing the American Soybean Association.

This is the third fair in which we have participated.

In an elaborately built U. S. agricultural pavilion, Foreign Agricultural Service of the U. S. Department of Agriculture exhibited five agricultural commodities: soybeans, wheat, cotton, tobacco, and tallow.

The soybean booth occupying approximately 850 square feet was located immediately at the right as you entered the pavilion.

The display design started with the history of soybeans, explaining how soybeans were first grown in China, then planted in Japan and eventually reached the United States. Next to this explanation a big map of the United States illuminated by electric bulbs, showing the important producing areas of soybeans, was hung on the wall.

Next to this map was a georama showing how soybeans are grown, cultivated and harvested by machines. A big photograph of the Port of New Orleans with a huge elevator showed how soybeans are loaded in bulk into the ocean-bound steamers. A big round panel hanging on the wall next to the elevator showed the innumerable uses of soybeans. Next came the exhibits by the Japanese Oil Processors Association followed by shoyu, miso and tofu exhibits.



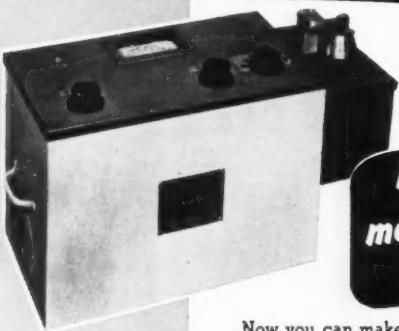
U. S. SOYBEANS were on display at the Osaka fair. From left are: C. M. Gregory, Farmers Cooperative Co., Dike, Iowa; J. D. Motz, assistant U. S. Agricultural Attache, Tokyo; and Albert Dimond, Lovington, Ill.

The booth was in more or less of an arc shape. In the center of the arc there stood a tall silo with an elevator carrying soybeans from outside into the silo. It was so constructed that the beans came out from the elevator to a box into which beans were constantly filled so that the elevator automatically carried them up into the silo. As the beans fell into the silo from the top the noise attracted the attention of the crowd.

Mr. and Mrs. Dimond arrived at Osaka on Apr. 11 together with C. M. Gregory representing the American Soybean Association. The official Government Agricultural Team was headed by Mr. Ioanes, assistant FAS administrator.

One of the new participants in the Fair this year was the Soviet Union.

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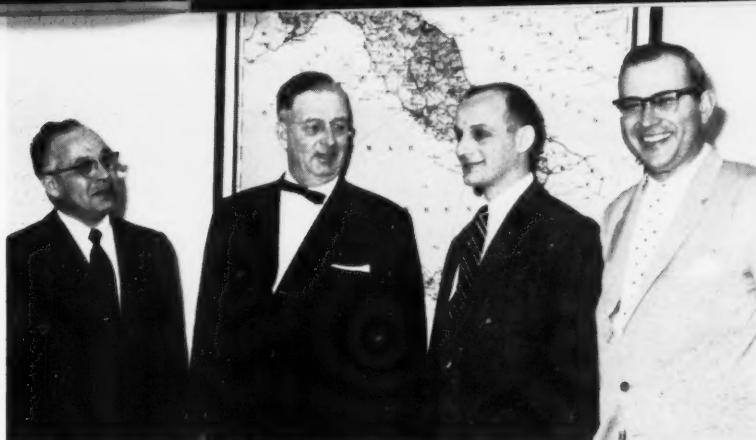
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NUMBER of soybeans in container is guessed by Japanese visitor at the Osaka fair. Center and right are George Maikawa and I. Yamaoka, officials of the Japanese American Soybean Institute.



AT ROME office of Soybean Council of America. Left to right: Dominic J. Marcello, Council director for Italy; Howard L. Roach, Council president; James Maslon, vice president, Honeymead Products Inc., Mankato, Minn.; and Dr. Fred R. Marti, Council's general director for Europe.

SOYBEAN COUNCIL OF AMERICA, INC.

Italian Shift: Wheat to Livestock

By DOMINIC J. MARCELLO

Director for Italy, Soybean Council of America, Inc., Vigna Clara, Edificio D, Rome, Italy

STUDIES and other activities conducted thus far indicate that there is a sizable market in Italy for U. S. soybean oil meal, oil and other soybean products. However, there are various competing sources of protein that the United States must be prepared to face. Among them are Russia and Yugoslavia in addition to western suppliers. Energetic efforts must be made to meet this competition both in price and quality.

Production of olive oil in Italy is not sufficient to meet domestic needs in an average year, and in years of short crops it falls far short of meeting those needs. Italian requirements for vegetable oils are now approximately 500,000 metric tons per year. These requirements are met with 250,000 tons of domestic olive oil and 50,000 tons of oil produced from domestic seeds which in reality are byproducts from other commodities (tomato seed, grape seed, etc.).

This production is stable except for small increases which may be gained if improvements are attained in the extraction process. Therefore, an average of 200,000 tons of vegetable oil (which could be U. S. soybean oil) must be procured from other sources.

There is great interest in expanding the livestock economy of Italy, and especially in the development of a poultry industry patterned after that in the United States. Such an industry will require increasing quantities of high quality protein for economic production. Soybean oil

meal, in its various forms, is the logical source of that protein.

The Italian Breeders' Association recognizes that the key to further progress in the livestock industry not only regarding quality but price lies in protein feed and it has recently joined hands with the National Association for Production of Livestock Feed to study the feed program. They have started a new publication called Livestock Feed (Alimentazione Animale) with the first and second issues just off the press. There will shortly be published in this publication the result of feed tests being carried on in various experimental stations in which soybean oil meal will play an important part.

This organization which has indicated its intent to participate in our program has offered space in its publication for any article we may wish to publish.

For many years it has been generally acknowledged that Italy's oft declared long range agricultural policy of shifting from marginal wheat production to livestock and poultry would result in an improvement in Italy's farm income and relieve the Italian government of a substantial and increasing financial burden of grain subsidies.

In any program of expansion of livestock and poultry production Italy must depend on additional imports of feed grains and especially protein feeds. These programs must be closely followed and encouraged. As they become realities all necessary steps must be taken to assure the filling of the needs, insofar as possible, with U. S. products.

"Wonder State"

ELEVATORS

Although the mechanics of Grain Elevators are the same, no matter who manufactures them, care in selecting the supplier is equally as important as selecting the size, type, and capacity of an Elevator. Your supplier, given ample information concerning your particular Elevator Requirements, can readily engineer the correct Elevator and related items to suit specific Elevator needs. WONDER STATE ELEVATORS are engineered to specifications and are complete in every detail from Dump Pit to Car Loader.

Our customers will tell you that we do what we say, and what we do, does the job efficiently. When you compare our prices with others, be certain to compare the equipment list also. You will find our prices very attractive.

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Paragould, Arkansas

GRITS and FLAKES... from the World of Soy

Transfers to New York For Penola Oil Co.

Aden P. Williams, Jr., marketing coordinator of International Petroleum Co., Ltd., has transferred from International's headquarters at Coral Gables, Fla., to accept a post in New York as a vice president and director of **Penola Oil Co.**

He succeeds the late C. Park Haneman, who died last fall. Penola is a marketing subsidiary of Esso Standard Oil Co., principal U. S. refining and marketing affiliate of Jersey Standard.

With International Petroleum since January 1956, Mr. Williams also served as the company's marketing manager in Peru. He was industrial sales manager in 1954 and 1955 for Esso Standard Oil, Havana, Cuba.

Changes by Grain Elevator at Mobile

L. L. Lacy is acting manager and William L. Heflin is acting plant superintendent of the **Public Grain Elevator** of the Alabama State Docks Department, Mobile, Ala., succeed-

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ing M. L. Hibbets and Leo E. Pickell who have accepted positions elsewhere.

Mr. Lacy was assistant to Mr. Hibbets and Mr. Heflin was assistant to Mr. Pickell during the past 3 years under the present ownership.

The firm has essentially the same group of experienced employees and there will be no change in policy, according to Mr. Lacy.

Don Reed Will Handle Arid Aire Ohio Sales

Daycom, Inc., manufacturer of **Arid-Aire** grain driers, has announced the appointment of Don Reed of Sidney, Ohio.

He will handle Arid Aire sales in the territory of Ohio and southern Indiana. He has been active in the grain drier business in the area for the past 10 years.

Mr. Reed will also supervise installation and service for Arid-Aire.

Associated with him in his work in southern Indiana will be Jack Brewer, Taylorville, Ill.



Don Reed

Konen Heads American Oil Chemists Society

J. C. Konen, vice president, Archer-Daniels-Midland Co., Minneapolis, has been elected president of the **American Oil Chemists' Society** for the 1958-59 term.

N. D. Embree, Distillation Products Industries, division of Eastman Kodak Co., Rochester, N. Y., was elected vice president.

The Association reelected at its annual meeting in Memphis: R. W. Bates, Armour & Co., Chicago, secretary; and A. F. Kapecki, Wurster & Sanger, Chicago, treasurer.

Members-at-large to serve on the governing board: A. R. Baldwin, Cargill, Inc., Minneapolis; A. E. MacGee, Skelly Oil Co., Kansas City; and R. C. Stillman, Procter & Gamble Co., Cincinnati.

Serving with the above seven men to make an 11-man governing board will be the four most recent past presidents: H. C. Black, T. H. Hopper, W. A. Peterson, and C. E. Morris.

Sorry! We Slipped

Our apologies to C. A. Thomas and R. F. Crane of the **Nitragin Co.** for the mixup in identity of their photos in the April issue.

Mr. Crane was identified as Mr. Thomas and vice versa in the story about Mr. Thomas' promotion as assistant sales manager and Mr. Crane's appointment as new Nitragin sales representative.

The promotion of George F. Mansess to the position of feed mill superintendent of the new Master Mix feed plant at Des Moines, Iowa, and Harold Small to the same post at the company's Memphis, Tenn., plant were announced by **McMillen Feed Mills**. Mr. Small replaces Mr. Mansess at Memphis.

The appointment of Richard H. Miller as elevator production engineer was announced by **Central Soya Co.** He will coordinate the operation of the firm's elevators on a company-wide basis. The Miller family will make their home in Fort Wayne, Ind.

Eugene T. Allen has been appointed plant manager of the solvents division, at Memphis, Tenn., of the **R. J. Brown Co.** Jack L. McBride has joined the petroleum solvents division in Chicago as a salesman. John J. Lynch has also joined the sales force and will work out of the Detroit, Mich., office.

Frank E. Dorsey, 84, with the **S. Howes Co.**, Silver Creek, N. Y., as a sales executive for 40 years before his retirement in 1951, died recently after a long illness.

Harold C. Wilber, terminal elevator section superintendent of the **A. E. Staley Manufacturing Co.**, has retired after more than 30 years with the firm. During the years he managed and developed the company's 11-million-bushel terminal elevator facilities.

The appointment of Henry J. Rempel as agricultural sales manager of the **Wonder Building Corp. of America**, Chicago manufacturer of pre-engineered trussless steel buildings, has been announced. Rempel, formerly a sales representative for Dunbar-Kapple, Inc., joined Wonder Building earlier this year.

West Virginia Pulp & Paper Co. has appointed Thomas A. Duncan

Midwestern district manager of kraft paper sales, with headquarters in Chicago where he will head up a kraft sales and service organization. He has been a member of West Virginia's sales staff in New York since 1951.

Convention dates of the **Midsouth Soybean and Grain Shippers Association** will be Aug. 5 and 6 at Hotel Peabody, Memphis, Tenn., announces Paul C. Hughes, secretary, P. O. Box 692, Blytheville, Ark.

The promotion of Fay Lippard to territory manager in southwestern Mississippi and eastern Louisiana was announced by the sales department of **McMillen Feed Mills**. He served as assistant territory manager in Tennessee.

Harold C. Fornshell has been appointed turkey specialist of the **A. E. Staley Manufacturing Co.**, Decatur, Ill. He has been territory manager in northeastern Indiana.

Appointment of Donald W. Hansen, Marion, Ind., as northeast Indiana territory manager for Staley's formula feeds has been announced by the **A. E. Staley Manufacturing Co.**, Decatur, Ill. He was with Hub-

bard Milling Co. for 9 years before joining Staley's recently.

A wrong number was reported in this column in April for the telephone of the general offices of **General Mills, Inc.**, at Minneapolis, Minn. Correct number is Liberty 5-2811.

Selma Soybean Corp. is the name of the new soybean processing plant under construction at Selma, N. C., to begin operations this coming season. It will be a 100-ton capacity, V. D. Anderson Co. plant. R. D. Gurley is manager and Hunt Moore, Memphis, Tenn., is consulting engineer.

Paul C. Hughes, **Farmers Soybean Corp.**, Blytheville, Ark., has been elected to the Arkansas Plant Board, succeeding Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark.

Thomas E. Kanakis, Little Rock, Ark., has joined the **A. E. Staley Manufacturing Co.**, Decatur, Ill., as sales supervisor of "Rockland diets" for laboratory animals. He will supervise sales and distribution of the company's full line of feeds specially formulated for exact uniformity and controlled content feeding of experimental laboratory ani-

mals. He has been in feed sales work in the Southern States for several years.

Prize by Olive Men

A PRIZE of 1 million liras is being offered by the International Olive Growers Federation for the most practical and original test for determining the origin of different oils, according to Jose Navarro y G. de Canales, general manager.

The test should determine whether an oil sample is a pure olive oil, and if a blend, the type and percentage of the blend.

For further information write the Soybean Digest, Hudson, Iowa.

S. Dak. Varieties

BLACKHAWK and **Hawkeye** are the two leading South Dakota soybean varieties. Each occupies 27% of the state's soybean acreage, according to the South Dakota Crop and Livestock Reporting Service.

Blackhawk leads in the east central district with 62% of the soybean acreage, while **Hawkeye** leads in the southeast district with 79% of the acreage.



SOYBEANS PAY OFF! when you inoculate with NITRAGIN



Whether you grow soybeans for seed or feed, it's just good business to avoid hit-or-miss inoculation with "carry-over" bacteria from previous crops. When you inoculate with the special, high nitrogen-fixing strains in Nitragin, you're sure to get your crop off to a fast start, establish a good stand. And when soybeans take their own nitrogen out of the air (instead of the soil) it saves fertilizer costs, builds a bigger, better crop... means more profit for you!

And it costs only pennies per acre! Just a handful of Nitragin goes a long way. For a lot less than a five dollar bill it can make tons of nitrogen fertilizer. Remember too, only Nitragin guarantees the bacteria count... averages 18-billion per bushel of seed. What's more, each container is dated to assure you of fresh, active bacteria at all times.

NITRAGIN MAKES LEGUMES PAY... in bigger yields, higher quality feed, low-cost fertility.

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THE NITRAGIN COMPANY

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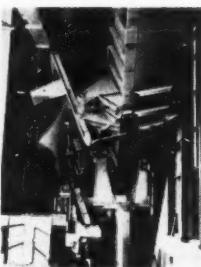
NEW PRODUCTS and SERVICES

BOX CAR UNLOADER. The new model of the Straight Bulk Box Car Unloader was developed after experience gained in building an unloader at Iowa Soya Co.

New features include a shallow pit design, strength to carry a heavy locomotive during switching and a fast cycle of operations.

The shallow pit design and smooth operation has allowed economical installations near water and over quicksand and solid rock, as well as in more conventional soil conditions.

For further information write Soybean Digest 5c, Hudson, Iowa.



BAG CLOSER ATTACHMENT. A new development announced by the Dave Fischbein Co. makes possible for the first time tape-bound closures with a completely portable bag-closing machine.

The new Fischbein Faseal tape-binding attachment for the Fischbein Portable Bag Closer secures tape-bound closures on all types of multi-wall paper bags. An attached knife severs tape and thread simultaneously after closure is made.

The portability of the unit is not affected by the tape-binding accessory. It can be operated as a completely portable unit, or in suspension from a counter-balancing Fischbein Suspension Unit.

For further information and for a complete catalog file of Fischbein bag closing equipment write Soybean Digest 5a, Hudson, Iowa.

SOLVENTS HANDLING. An up-to-the-minute "how to" booklet on the proper handling of petroleum solvents has been published by Esso Standard Oil Co.

The booklet, "Handling Petroleum Solvents," is believed to be the first manufacturer's publication dealing exclusively with petroleum solvents.

Esso Standard points out that petroleum solvents are not dangerous to the user if they are handled properly.

The booklet contains tables and diagrams showing solvent flammability data, explosive temperature limits and maximum allowable vapor concentrations.

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SOYBEAN OIL HAULING
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Inter and Intra State Tank Truck Operators . Edible Oils
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Cincinnati 32, Ohio If no answer call Grandview 1-5529

The detailed and highly technical booklet was not prepared for the general public, the company said. However, it will be available in 18 eastern and southern states and in the District of Columbia, where Esso markets its products.

For further information write Soybean Digest 5d, Hudson, Iowa.

VITASCOPE. Burrows Equipment Co. has been appointed exclusive U. S. distributor of Vitascope, manufactured by Foss Electric Co. of Copenhagen. The Vitascope is widely used by leading grain traders and malting laboratories in Western Europe.



The Vitascope represents a tremendous advance in the determination of the germinating power of grain and seed, says Parke Burrows, president of Burrows Equipment Co. It will give an accurate determination of germinating capacity in a few minutes.

As yet the Vitascope cannot be used for labeling, but it will give a very accurate and rapid indication of germination potential for the grain and seed buyer.

For further information write Soybean Digest 5e, Hudson, Iowa.

COMBINE. John Deere announces what it calls the biggest self-propelled combine ever offered to large-acreage grain growers. It's the new 95, with 14-, 16-, or 18-foot platform.

The 95 not only takes a big cut—it's big all the way through. Behind its big platform is a 40-inch feeder, a 40x22-inch threshing cylinder, a 40-inch separator providing more than 5,600 square inches of separating area, more than 4,000 square inches of cleaning area, a new 80-horsepower John Deere engine, a 60-bushel grain tank, large tires for good traction and flotation, and other features.

The 95 will be available for the 1958 harvest season. For more details write Soybean Digest 5b, Hudson, Iowa.

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PROFITS 5 TIMES GREATER THAN LOSSES
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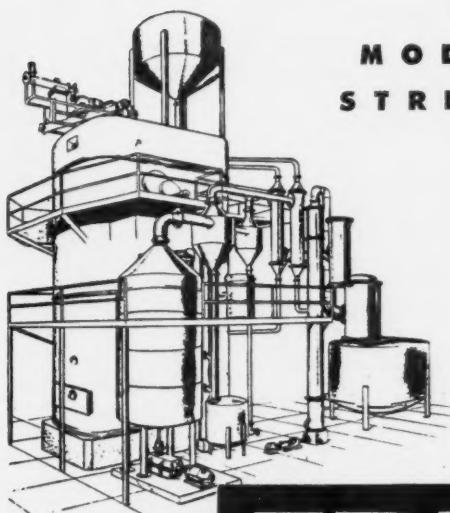
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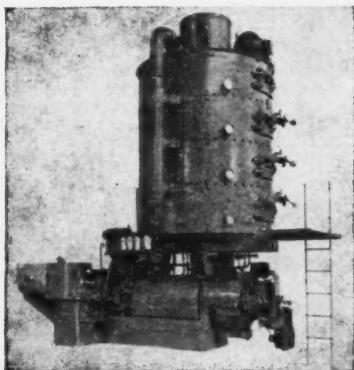
cut
operating
costs
reduce
solvent
loss



FRENCH

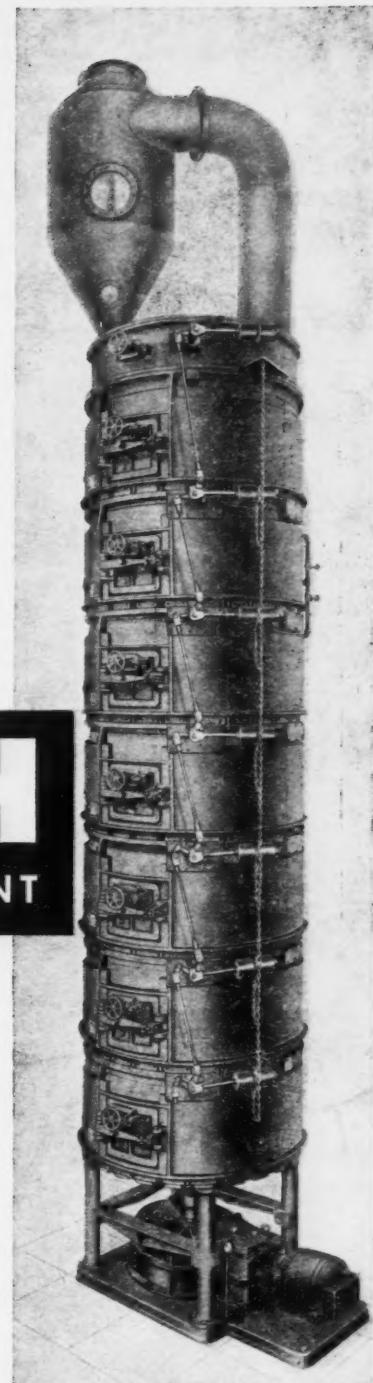
OIL MILLING EQUIPMENT

French, the world's largest manufacturer of vegetable oil processing equipment, can show you how to cut operating costs . . . increase capacity . . . and improve product quality. Our engineers have made complete studies of many operating plants of all makes—and have shown management how to cut costs and increase capacity . . . all at very low cost. Ask us to make recommendations for boosting the efficiency and profits of your plant. Write to FOMMCO, Extraction Division, Piqua, Ohio.



French Continuous Mechanical Screw Press. Residual oils as low as 2.5%.

FOT

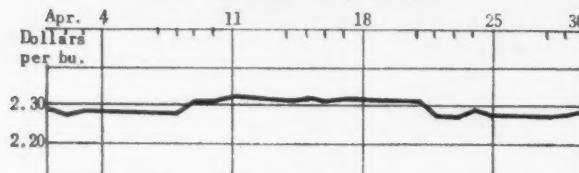


French patented Desolventizer-Toaster.

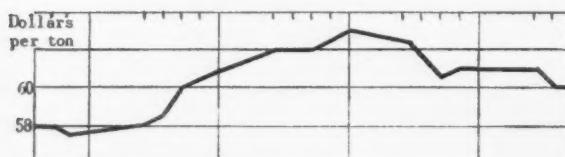
THE **FRENCH** OIL MILL
MACHINERY CO.
PIQUA, OHIO—U. S. A.

- MECHANICAL SCREW PRESSES • COOKER-DRYERS
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- FLAKING AND CRUSHING ROLLS

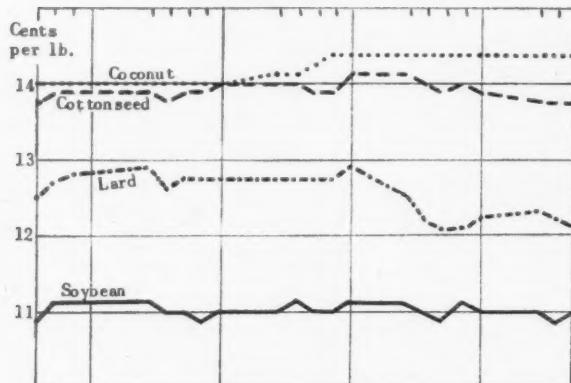
DAILY MARKET PRICES
No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Vegetable Oils and Lard



April Markets

THE STEEP rise in soybean oil meal prices begun Feb. 1 was resumed and continued past mid-April. Cash soybean and soybean oil prices held about level. There was a variation of about $\frac{1}{2}$ ¢ in oil prices and 5¢ in cash bean prices during the month.

Factors ruling the markets in April included:

1—Continued heavy demand for soybean oil meal. Purchases by feed mixers continued to run ahead of last year. Pastures were reported putting forth spring growth about 2 weeks later than normal, and this helped to boost feed demand.

2—The lag in export sales. Exports of soybeans were running about the same as a year earlier, but below expectations. Exports of oil were behind a year ago. Delay in passage of the P. L. 480 bill did not help.

3—The government Apr. 1 stocks report showing abundant stocks of soybeans in all positions.

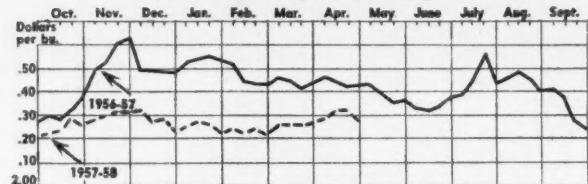
Bullish factors included:

1—The large quantity of soybeans under loan as of Mar. 15. USDA stated about two-thirds of the 90 million bushels of soybeans will be needed before new crop soybeans are available.

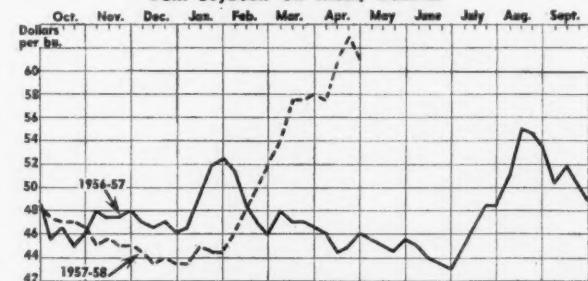
2—Delay in planting of the cotton crop and the probability of a small cotton acreage.

TRENDS AT A GLANCE (Weekly Close)

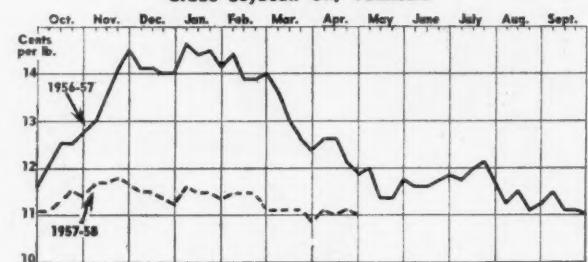
No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



3—The crush of almost 31 million bushels of soybeans in March which was larger than expected.

4—The report of an 8% drop in Mediterranean Basin olive oil production as compared to last year.

BY PRODUCTS The price of soybean fatty acids remained at $15\frac{1}{4}$ ¢ per pound during April. Acid soybean soap stock delivered Midwest remained at 5¢, and raw soybean soap stock at $1\frac{1}{8}$ ¢ per pound.

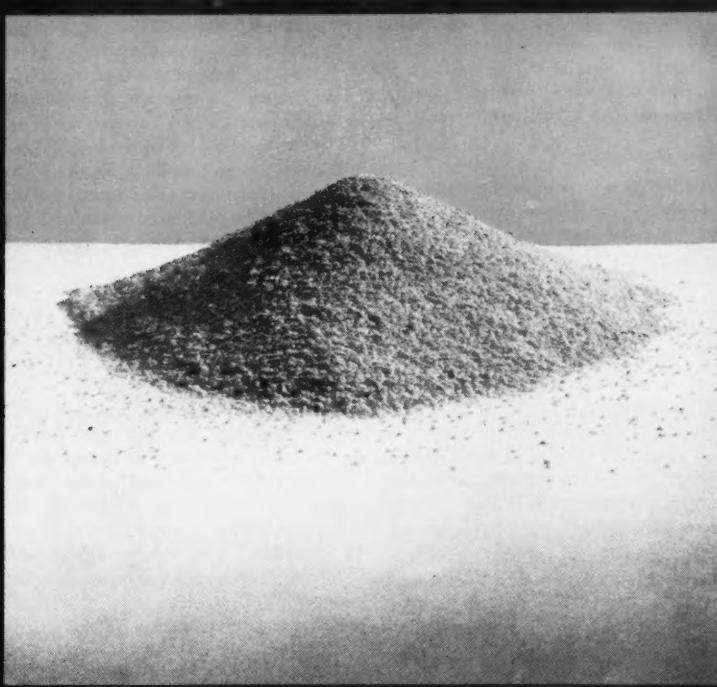
1956 AND 1957 SOYBEAN CROPS

1957-58 1956-57

Total soybeans placed under price support as of Mar. 15	90,435,000 bu.	65,723,000 bu.
Total soybeans withdrawn from support as of Mar. 15	2,151,000 bu.	10,730,000 bu.
Total remaining under support	88,284,000 bu.	54,993,000 bu.
Soybeans crushed Oct. 1-Apr. 1	174,772,000 bu.	165,457,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Apr. 25	60,619,462 bu.	60,282,422 bu.
Balance on hand Apr. 1 for processing, export or carryover	230,341,000 bu.	191,664,000 bu.

For details see "In the Markets" beginning page 48.

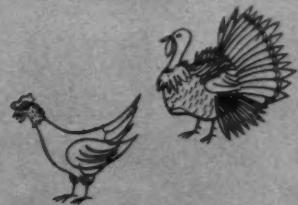
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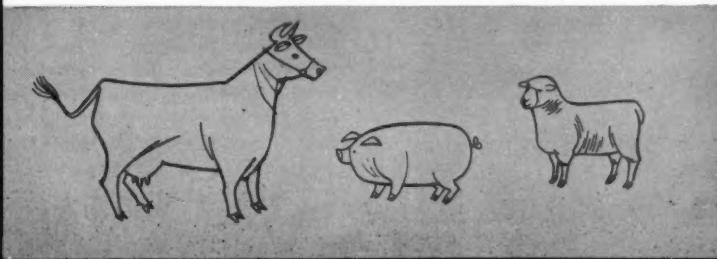
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WASHINGTON DIGEST

Still Look for 30 Million Carryover

THE APRIL stocks report indicates that soybean use is turning out to be pretty close to the estimates of Department of Agriculture officials.

Stocks Apr. 1 totaled a record 254,404,000 bushels, 39 million bushels above a year ago. This gives a mathematical disappearance from total supplies of 490 million bushels at the start of the season of 236 million bushels.

Accountable disappearance during the first half of the marketing year comes to around 234 million bushels—about 157 million bushels processed, nearly 55 million bushels exported, around 1 million bushels fed, and some 3 to 4 million processed from the 1957 crop before Oct. 1.

USDA officials reviewed the outlook for soybeans and soybean oil exports last week. They're sticking to earlier estimates at the present time:

A crush of about 340 million bushels; exports of some 90 million bushels, though a few officials think this may now be a shade lower. Carryover is still calculated at about 30 million bushels. Officials think this is not bad considering the record size of the crop to be handled and the fact total exports in terms of beans and oil have tapered off a little this season.

USDA is standing by its estimate of 1.1 billion pounds of edible fats and oils exports for the marketing

year, even though shipments have lagged considerably behind a year ago so far.

Total exports of oils and oil equivalent of soybeans for the 1957-58 year are calculated at 2.1 billion pounds compared with nearly 2.2 billion a year ago. Around 60% of the edible oils not counting soybeans is expected to move under the P. L. 480 program and the ICA program. Recently concluded agreements for substantial amounts of oil are counted on to boost exports during the balance of the marketing year.

Price Outlook

USDA says "soybean oil prices through the spring are likely to continue around present levels, and somewhat below a year earlier. Prices later in the marketing year will be influenced by the size of supplies of edible oils.

"If crop prospects suggest large supplies in 1958-59, pressure on supplies this summer will not be great. Pressure would increase, however, with signs of a drop in total carry-over stocks of cottonseed and soybean oils below the estimated 375 to 400 million pounds.

"The demand for soybean oil and meal will continue fairly strong, and the price spread between the cost of soybeans and the value of products is not likely to change much."

Lowest output of lard in some years is one reason for the increase



By PORTER M. HEDGE
Washington Correspondent for
The Soybean Digest

in soybean crushings, officials say. Output is now estimated at 2.5 billion pounds, about 100 million below last season.

For the new year beginning next October a near record supply of food fats is indicated. There will be some increase in lard production. Cottonseed oil output may be down some because of a large soil bank acreage. Butter production will be up to around this year's level, and soybean supplies will be larger.

Japanese Market

It's now officially established that the Japanese steel-Chinese soybean barter arrangement is going through and is not affected by the breakdown of the fourth trade agreement between the two countries.

Imports of Chinese beans under the arrangement could be increased from 200,000 tons to 300,000 tons. Officials say there are reports that around 265,000 tons of Chinese soybeans have been contracted for.

The maximum effect this could have on U. S. soybean exports this season would be around 100,000 tons, or a little over 3½ million bushels. Long range effects might be greater, though some are doubtful that the Chinese will be able to produce too many beans for export above needs of the people.

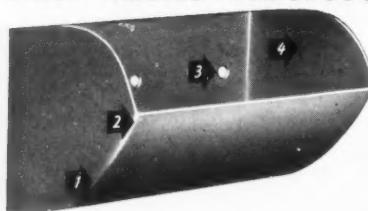
Drought has cut the Philippine copra crop at least 15% to 20% and probably more, officials indicate from personal reports from the area.

This could mean more markets for U. S. soybeans if an effort is made to get them. A 15% cut in the Philippine copra production would amount to approximately 200,000 long tons of oil, or the equivalent of around 40 million bushels of soybeans.

P. L. 480 Report

The role of fats and oils in providing improved nutrition in many parts of the world through the Public

First Choice Wherever Grain is Handled



Your jobber has them, or write B. I. Weller Company, 327 South LaSalle Street, Chicago 4, Illinois.

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Law 480 program is highlighted in the Senate agriculture committee report just issued under the signature of Senator Hubert Humphrey of Minnesota.

The report recommends that "every effort should be made by the Department (of Agriculture) to provide some form of fats and oils to voluntary agencies carrying on relief feeding programs abroad."

The use of fats and oils in food programs of the voluntary agencies handling overseas relief through the P. L. 480 program is highlighted in the report.

Approval of larger amounts of fats and oils for inclusion in feeding programs abroad was one of the unanimous requests of the representatives of voluntary agencies providing overseas assistance, the report says.

The report credits the P. L. 480 program with boosting the farm prices of oil crops in both 1955 and 1956. It says "the prices of cottonseed and soybean oils were raised by 1½¢ to 2¢ a pound in 1955 and by about 2¢ in 1956.

"With no program the 1955 and 1956 crops of soybeans would have been marketed at support levels. Because of the program soybeans were 15¢ a bushel higher than support in 1955 and 7¢ a bushel higher in 1956."

Work of the American Soybean Association and the Soybean Council of America in promoting additional markets for soybeans in Japan, Spain and Italy is cited. The report says, "Spain offers special opportunities for greater use of U. S. oils."

ASA Executive Vice President George Strayer is quoted in testimony as saying, "We have only scratched the surface on the possibilities of selling American soybeans and soybean products in world markets." In addition to the northern European and Mediterranean Basin countries, Central and South American countries and India, Pakistan and other countries of the Far East are cited as potential future markets for the U. S. soybean.

Garnett Leaving

Gwynne Garnett, head of the Foreign Agricultural Service of the Department of Agriculture, has announced his resignation as of about mid-May to become an official with Pan-American Airways.

Garnett is one of the originators of the P. L. 480 program and has been a popular head of the FAS organization.

Max Myers, director of the South Dakota Agricultural Experiment Station, has been named director of FAS as Garnett's successor, according to newspaper dispatches at press time.

Heavy Pest Damage

THE SOYBEAN crop sustained the heaviest damage from pests in 1958 in the history of its growth in South Carolina, reports pest plant control division, Agricultural Research Service, USDA.

Velvetbean caterpillars were the most important.

Organize Vegetable Oil Export Corp.

THE VEGETABLE Oil Export Corp. was formed at an organizational meeting held in Chicago, Apr. 17.

The corporation is organized under the authority of the Webb-Pomerene Act to engage solely in export activities relating to soybean oil and related products.

Contemplated activities include export sales of all kinds of soybean oil, either direct or to other firms for export, as well as advertising and promotion abroad, including cooperation with government agencies to develop new export markets and to expand existing export markets.

Headquarters of the Vegetable Oil Export Corp. are 1017 National Press Bldg., Washington 4, D. C.

Officers, directors and member companies of the new corporation are: chairman of the board, Glenn Pogeler, North Iowa Co-op Process-

ing Association; president, Ralph G. Golseth, Lauhoff Soya Co.; vice president, Dwayne O. Andreas, Honey-mead Products Co.; secretary and treasurer, Sewall D. Andrews, Jr., General Mills, Inc.; Earl J. Brubaker, Borden's Soy Processing Co.; A. M. Convis, Funk Bros. Seed Co.; Dwight L. Dannen, Dannen Grain & Milling Co.; A. C. Hoehne, Archer-Daniels-Midland Co.; W. E. Huge, Central Soya Co., Inc.; Robert B. Jude, Spencer Kellogg & Sons, Inc.; M. W. Lyons, Wesson Oil & Snowdrift Co.; Donald C. Ogg, Iowa Soya Co.; E. K. Scheiter, A. E. Staley Manufacturing Co.; William K. Self, Riverside Oil Mill; Donald B. Walker, Ralston Purina Co.; Edward M. Wiecher, Delphos Grain & Soya Products Co.; and Clark Yager, Pillsbury Mills, Inc.

General manager is George L. Prichard, at the headquarters office.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate 10c per word per issue.
Minimum insertion \$2.00.

FOR SALE: ALLIS-CHALMERS style "N" roller mill, 9" x 30", two pair high. Full set of spare rolls. Best Equipment Co., 1737 Howard St., Chicago 26, Ill. AMbassador 2-1452.

PAINT FACTORY PRICES \$2.25 gal. Retail value \$5.95. Free sample. Snow White Paint, Toledo, Ohio, Dept. BGB.

WANTED: ANDERSON FLAKING rolls, or frame without rolls. Contact R. G. Gurley, Phone 2303, Selma, N. C.

USED VAC-U-VATORS—REBUILT and factory-guaranteed. Contact Dunbar-Kapple, Inc., Vac-U-Vator Div., Box 361, Batavia, Ill. Phone Batavia 5-400.

FOR SALE — ANDERSON AND French expellers, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 2222 Oakview Drive, Jefferson City, Mo.

STEEL GRAIN BINS—SOME 3,300, 4,400 and 6,000-bushel capacities available at attractive prices. Midwest Steel Products Co., 121B Railway Exchange Bldg., Kansas City 6, Mo.

FOR SALE — PNEUMATIC "AIR-conveyor" systems—positive pressure, Sutorbilt, new or used. Any size, capacity, distance or product. Nolder Co., Box 14, Corona Del Mar, Calif.

WANTED: FLAKING AND CRACKING rolls, meal coolers and driers and roller mills. Soybean Digest, Box 319-J, Hudson, Iowa.

FOR SALE—CERTIFIED GRANT soybeans, tagged and bagged, \$3 per bu. Leonard Schlosser & Sons, Loretto, Minn.

FLAKING AND CRACKING MILL for sale, Buckeye 5 roll 48 x 14, good condition, cheap. Soybean Digest, Box 319-O, Hudson, Iowa.

MACHINERY FOR SALE: ANDERSON Super-duo grain expander, expeller and allied equipment, machinery almost brand new. Soybean Digest, Box 319-S, Hudson, Iowa.

GARDEN CITY INSTRUMENTS, Inc. The official repair station for Weston (Tag) moisture meters. New and used Tag meters for sale. 931 Sherman Ave., Evanston, Ill. SHeldrake 3-4450, GReenleaf 5-3626.

IN THE MARKETS

MEAL, OIL EXPORTS. U. S. exports of cottonseed and soybean oils in October-February 1957-58 are preliminarily estimated at 327.6 million pounds, somewhat more than half the quantity shipped in the first 5 months of the previous year. However, with quantities moving in volume under P. L. 480 sales, total exports in coming months should gain momentum, reports Foreign Agricultural Service.

Estimated exports of cottonseed oil in February were about one-fifth below January 1958 shipments and less than half those of February 1957. October-February estimated exports of 162.5 million pounds were only three-fourths as great as October-February 1956-57 shipments.

Estimated soybean oil exports in February were but about 30% of January exports and 15% of February 1958 shipments. Cumulative October-February exports are estimated of 165.1 million pounds—only 40% of the volume in the first 4 months of the previous marketing year.

Estimated exports of cake and meal in February were about half those of the previous month and of February 1957. October-February estimated exports of 164,500 short tons were slightly more than half those of the comparable period last marketing year.

Cottonseed oil, soybean oil, oilcakes, and meals: U. S. preliminary estimates of exports in February 1958 and October-February 1957-58, and actual exports February 1957 and October-February 1956-57

	February		October-February	
	1957	1958	1956-57	1957-58
	Preliminary	Preliminary	Million pounds	Million pounds
Cottonseed oil, refined	5.7	10.9	44.9	30.6
Cottonseed oil, refined and further processed	2.0	1	10.8	13.4
Cottonseed oil, crude	28.6	6.1	168.0	118.5
Total cottonseed oil	36.3	17.1	223.7	162.5
Soybean oil, refined	2.1	9.5	24.7	60.7
Soybean oil, refined and further processed	39.2	1.6	209.0	45.3
Soybean oil, crude	46.6	3.9	167.0	59.1
Total soybean oil	87.9	15.0	400.7	165.1
Total cottonseed and soybean oil	124.2	32.1	624.4	327.6
Thousand short tons		Thousand short tons		
Cottonseed cake and meal	.7	1	26.0	5.9
Linseed cake and meal	5.6	1	36.3	5.8
Soybean cake and meal	31.7	20.1	258.7	152.8
Total cake and meal	38.0	20.2	321.0	164.5

1 Less than 50 short tons. Compiled from official records of the Bureau of the Census.

FACTORY USE VEGETABLE OILS for January and February 1958. Reported by Bureau of the Census (1,000 pounds)

Primary materials: Factory production and consumption, and factory and warehouse stocks, February 1958-January 1958

	Factory production		Factory consumption		Factory and warehouse stocks	
	Febr-	Jan-	Febr-	Jan-	Febr-	Jan-
	1958	1958	1958	1958	1958	1958
Cottonseed crude	140,101	174,440	120,251	154,029	136,965	129,699
Cottonseed, refined	108,729	138,290	94,796	115,273	160,691	151,546
Soybean, crude	288,663	328,321	290,039	307,917	242,552	261,537
Soybean, refined	276,880	292,857	271,887	285,901	116,994	114,704
Hydrogenated vegetable oils—						
Edible:						
Cottonseed	24,910	27,456	24,451	28,393	12,771	14,134
Soybean	122,934	144,416	114,492	133,741	43,408	41,759
Other	5,314	5,696	5,413	6,283	3,970	3,809
Inedible		294	1,160	1,182	1,548	1,517
Margarine ¹	135,202	150,862	(NA)	(NA)	34,324	28,930

NA—Not available. ¹ Data for stocks exclude quantities held by consuming factories.

Factory consumption of vegetable fats and oils, by uses, during February 1958

	Edible products				Inedible products		
	Shortening	Margarine	Other edible	Soap	Lubricants	Paint and similar oils ¹	Other inedible ²
Cottonseed, refined	11,176	824	2,180	(3)	....	(3)	149
Soybean, crude	....	....	....	33	222	(3)	1,187
Soybean, refined	44,275	11,126	8,616	(3)	5,254	6	6,599
Foots, vegetable, raw and acidulated ³ (100% basis)	....	....	....	2,285	67	714	2,012
Hydrogenated vegetable oils, edible:	....	....	....	....	....	....	....
Cottonseed	8,501	13,912	....	....	....	....	....
Soybean	34,622	78,197	1,607	....	....	....	....
Other	2,009	2,177	....	....	....	....	....

¹ Includes quantities consumed in lubricants, greases, cutting oils, dielectric oils, core oils, brake fluids, and metal working. ² Quantities consumed in linoleum and animal feeds are included in the above totals.

³ Not shown to avoid disclosure of figures for individual companies.

Consumption of primary fats and oils in fat splitting

	1958		1957		
	Jan.-Feb.	January	Cumulative	Jan.-Feb.	Cumulative
Soapstocks	6,293	5,902	12,195	6,985	14,452

PROCESSING OPERATIONS. Reported by Bureau of the Census for February and March.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stocks, March 1958-February 1958

	Tons of 2,000 pounds					
	Production		Shipments and transfers		Stocks end of month	
	March 1958	February 1958	March 1958	February 1958	Mar. 31, 1958	Feb. 28, 1958
Soybean:						
Cake and meal	718,450	628,143	710,110	633,479	81,707	73,367
Flour	8,884	10,296	9,065	9,883	1,636	1,817
Lecithin	1(NA)	1(NA)	1(NA)	1(NA)	1(NA)	1(NA)

NA—Not available. ¹ No longer being collected.

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, March 1958-February 1958 (Tons of 2,000 pounds)

	Tons of 2,000 pounds					
	Net receipts at mills		Crushed or used		Stocks at mills	
	March 1958	February 1958	March 1958	February 1958	Mar. 31, 1958	Feb. 28, 1958
U. S.	778,077	599,734	925,505	813,116	1,739,478	1,886,906
Illinois	301,925	230,942	286,481	272,252	601,826	586,382
Indiana	65,225	54,650	76,848	72,246	132,007	143,630
Iowa	133,613	91,673	142,142	128,188	172,901	181,430
Kansas	1	1	1	1	1	7,564
Kentucky	1	16,377	1	19,501	1	1
Minnesota	60,517	42,115	66,487	51,147	26,458	32,428
Missouri	23,204	14,222	33,035	28,650	78,403	88,234
Nebraska	1	1	1	1	1	1
North Carolina	1,216	2,780	6,055	5,864	19,948	24,787
Ohio	67,244	66,363	87,353	83,678	209,689	229,798
Texas	1	1	1	1	1	1
All other	125,133	80,612	227,104	151,590	498,246	592,653

¹ Included in "All other" to avoid disclosure of figures for individual companies.

Soybean products: Production and stocks at oil mill locations, by states, March 1958-February 1958

	Production and Stocks (thousands of pounds)					
	Crude oil		Cake and meal			
	Mar. 1958	Feb. 1958	Mar. 31, 1958	Feb. 28, 1958	Mar. 1958	Feb. 1958
U. S.	330,112	288,663	116,064	110,197	718,450	628,143
III.	106,457	100,660	35,444	36,804	218,115	204,177
Ind.	27,278	25,651	7,632	10,642	61,060	57,163
Iowa	49,644	44,980	17,927	20,651	113,778	102,853
Kan.	1	1	736	1,039	1	1
Ky.	1	7,015	1	700	1	15,493
Minn.	22,956	16,707	26,407	17,016	51,800	39,233
Mo.	12,108	10,315	1,628	1,619	25,742	22,304
Nebr.	1	1	1	1	1	1
N. C.	1,842	1,677	817	972	4,717	4,541
Ohio	31,144	29,858	8,022	5,582	69,799	66,991
Texas	1	1	1	1	1	1
All other	78,683	51,800	17,451	15,172	173,439	115,388

¹ Included in "All other" to avoid disclosure of figures for individual companies.

STOCKS ON FARMS. Farm stocks of soybeans on Apr. 1 are estimated at 116 million bushels, Agricultural Marketing Service reports. This is a record but only slightly higher than the nearly 115 million bushels stored on farms a year earlier.

A much higher than usual percentage of the farm stocks are under government loan this year. Farm loans outstanding and purchase agreements on Mar. 15 amounted to nearly 50 million bushels.

Soybean supplies held for seed plus those under loans and purchase agreement constitute 60-65% of the Apr. 1 stocks.

Disappearance of soybeans from farms during the January-March quarter totaled 72 million bushels. This is by far the heaviest of record for a similar period and compares with 52 million bushels last year. Due to the record production there has been little incentive for farmers to hold large stocks on farms.

Stocks on farms were heavily concentrated in the North Central states with that area accounting for 93% of the U.S. total. Stocks were lower than last year in the South Central states.

Supplies for seed are expected to be ample in all producing states.

Soybean stocks on farms Apr. 1, Crop Reporting Board, AMS, USDA

	Average			Average			
	1947-56	1957	1958	1947-56	1957	1958	
	1,000 bushels			1,000 bushels			
N. Y.	26	28	27	Md.	272	310	385
N. J.	103	238	185	Va.	448	874	595
Pa.	125	116	82	N. C.	841	1,073	1,048
Ohio	5,312	8,430	7,517	S. C.	260	698	1,020
Ind.	7,241	12,338	12,189	Ga.	87	213	196
Ill.	15,005	33,124	30,441	Fla.	115	67	83
Mich.	595	1,470	2,077	Ky.	358	748	400
Wis.	189	567	858	Tenn.	337	554	547
Minn.	5,654	19,440	19,729	Ala.	66	139	171
Iowa	10,323	19,500	25,407	Miss.	649	1,171	993
Mo.	3,410	8,012	6,335	Ark.	749	2,309	1,950
N. Dak.	128	759	1,055	La.	57	298	200
S. Dak.	412	953	982	Okla.	42	14	51
Nebr.	256	332	740	Texas	35	35	
Kans.	558	453	468	U. S.	53,750	114,677	116,152
Del.	231	414	386				

1 Short-time average.

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel)

Average farm price	Effective parity	Average price as percent of parity			National average price support rate
		Mar. 15	1958	1957	
Mar. 15	Feb. 15	Mar. 15	1958	1957	
1958	1958	1957			
2.10	2.05	2.26	3.02	70	2.09 2.09 2.15

Average farm and parity prices from crop reporting board.

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STOCKS. Soybean stocks of 254 million bushels in all storage positions on Apr. 1 were the largest of record for the date and were 18% above a year earlier, the previous high, according to Agricultural Marketing Service. Most of the increase over last year is in the off-farm positions—up 37%.

Stocks on Apr. 1 indicated a disappearance during the 6 months, October 1957-March 1958, of 236 million bushels from a supply of 490 million bushels, (carryover of 10 million plus 1957 production of 480 million bushels). During the period about 175 million bushels were processed for oil and nearly 55 million were exported.

Stocks of soybeans Apr. 1, 1958, with comparisons (1,000 bu.)			
Apr. 1 av.	Apr. 1	Jan. 1	Apr. 1
1947-56	1957	1958	1958
On farms ¹	53,750	114,677	116,152
Terminals ²	10,334	9,716	17,977
Commodity Credit Corp. ³	85	.....	.....
Processing plants ⁴	45,560	44,232	78,863
Int. mills, elev. & whses. ^{1,4}	22,110	46,845	62,292
Total	131,838	215,470	254,404

¹ Estimates of the crop reporting board. ² Commercial stocks reported by Grain Division, AMS, at 45 terminal cities. ³ Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions. ⁴ All off-farm storages not otherwise designated, including merchant mills. ⁵ Firms reporting crushings and stocks of soybeans to the Bureau of the Census.

Stocks of soybeans, Jan. 1, 1958 (1,000 bu.)

	Off-farm total ¹	Total ² all positions		
	Jan. 1	Jan. 1	Jan. 1	
1957	1958	1957	1958	
Ohio	9,145	12,043	17,575	19,560
Indiana	6,165	7,141	18,503	19,330
Illinois	33,051	43,823	66,175	74,264
Minnesota	11,781	19,450	31,221	39,179
Iowa	14,106	25,278	33,606	50,685
Missouri	4,986	5,582	12,998	11,917
North Carolina	1,374	940	2,447	1,988
Others ⁵	20,185	23,995	32,945	37,481
U. S.	100,793	138,252	215,470	254,404

¹ Other states and unallocated—to avoid disclosing individual operations. ² Includes stocks at interior mills, elevators and warehouses, commercial stocks reported by Grain Division, AMS, at terminals and those owned by Commodity Credit Corp. which are in bins and other storages under CCC control. ³ Off-farm total plus farm stocks.

MELLORINE. Production of mellorine and other frozen desserts made with fats and oils other than milk-fat during March was estimated by the Agricultural Marketing Service at 2,670,000 gallons. This was 11% larger than the March output last year and was 37% above the 5-year average for the month.

Production of mellorine and other frozen desserts made with fats and oils other than milk-fat, United States, 1958

1952-56	Estimated			Change from: Percent
	Average ⁶	1956 ⁷	1957	1952-56 Av. 1957
		Thousand gallons		
January	1,289	1,807	1,835	2,100 + 63 + 14
February	1,482	2,057	2,000	2,185 + 47 + 9
March	1,944	2,665	2,415	2,670 + 37 + 11
Three month total	4,715	6,529	6,250	6,955 + 48 + 11

⁶ From enumerations.

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STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	Apr. 1	Apr. 8	Apr. 15	Apr. 22
U. S. soybeans in store and afloat at domestic markets				
Atlantic Coast	1,516	1,112	616	652
Gulf Coast	558	560	533	1,599
Northwestern and Upper Lake	4,542	3,865	3,259	2,859
Lower Lake	9,617	9,417	8,945	8,874
East Central	1,395	1,339	1,504	1,583
West Central, Southwestern & Western	844	318	325	671
Total current week	18,472	16,611	15,182	16,238
Total year ago	9,716	9,286	8,874	7,484

	U. S. soybeans in store and afloat at Canadian markets
Total current week	1
Total year ago	153

	Total North American commercial soybean stocks
Current week	18,473
Year ago	9,869

	Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:			
	Mar. 28	Apr. 4	Apr. 11	Apr. 18
Chicago	301	139	538	504
Indianapolis	162	196	131	135
Kansas City	178	141	156	156
Minneapolis	47	188	124	185
Omaha	113	48	49	70
Peoria	31	34	41	32
Sioux City	6	8	8	6
St. Joseph	2	—	6	8
St. Louis	5	2	3	4
Toledo	113	102	117	165
Totals	958	858	1,173	1,265
Last year	436	654	967	651
Total Chicago soybean stocks	7,873	7,759	7,303	7,543

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for February 1958 with comparable data for February 1957 and accumulative totals for the marketing years 1956-57 and 1957-58, reported by Foreign Agricultural Service, U. S. Department of Agriculture.

Unit	February		October-February	
	1957	1958	1956-57	1957-58
Soybeans bu.	4,204,284	3,904,925	48,645,840	50,618,606
Soybean oil: Crude lb.	46,609,156	3,939,938	166,973,883	59,143,979
Refined, but not further processed lb.	2,084,260	10,371,293	24,728,399	61,560,734
Refined, deodorized and hydrogenated lb.	39,236,776	1,819,314	208,939,241	45,512,429

Soybeans: Inspections for export by coastal areas, and country of destination, March 1958 (1,000 bu.)

Atlantic		France		75
Denmark	186	West Germany	93	
The Netherlands	856	Korea	217	
West Germany	162	Japan	2,067	
Taiwan (Formosa)	111	Subtotal	2,741	
Japan	125	Grand total	4,181	
Subtotal	1,440	Total January-March 1958	14,661	
Gulf		Total January-March 1958		
Norway	75	Total January-March 1957	17,888	
The Netherlands	177			
Belgium	37			

Note: Based on weekly reports of inspections for export by licensed inspectors and do not include rail or truck movement to Canada or Mexico. In some cases the ultimate destination of the soybeans exported is not shown on the inspection reports, therefore, the quantity of each country may vary from official census data which are based on custom declarations.

Soybeans: Inspections for export, by ports, March 1958 (1,000 bu.)

Atlantic		Gulf	
Philadelphia	18	New Orleans	2,533
Baltimore	669	Port Allen	208
Norfolk	753	Subtotal	2,741
Subtotal	1,440	Grand total	4,181

Note: Based on weekly reports of inspections for export by licensed inspectors and do not include rail and truck movement to Canada or Mexico.

Title I, P. L. 480 shipments, July 1957-March 1958

March 1958			July 1957-March 1958		
Metric	tons	Unit	Metric	tons	Unit
Cottonseed oil	5,023	lb.	11,674,000	30,635	lb.
Soybean oil	13,464	lb.	29,684,000	31,289	lb.
Linseed oil	—	lb.	—	290	lb.
Lard	—	lb.	—	1,246	lb.
U. S. Department of Agriculture	—	—	—	—	—

PRICE SUPPORTS. Quantities of 1957 and 1956-crop soybeans put under price support through Mar. 15 (1,000 bu.)

Quantity put under loan	Quantity of loans withdrawn	Purchase	Total put under support	Total put under support	
Form	Ware- stored	Total	from agree- ments	1957-58	1956-57
32,065	39,442	71,507	2,151	18,928	90,435

¹ Total placed under price support is the sum of the total put under loans and purchase agreements through Mar. 15. Farmers had repaid loans on 2,150,757 bushels of soybeans, and had delivered in payment of loans 27,693 bushels through Mar. 15.

Soybeans: Quantity under support compared with loans redeemed through Mar. 15, 1958 (1,000 bushels)

State	Under support	Loans redeemed	State	Under support	Loans redeemed
Alabama	49	5	Nebraska	519	38
Arkansas	1,479	68	New Jersey	7	3
Delaware	2	1	New Mexico	3	0
Florida	5	0	New York	1	0
Georgia	55	2	North Carolina	69	1
Illinois	21,959	585	North Dakota	1,027	49
Indiana	4,403	375	Ohio	2,460	80
Iowa	34,543	188	Oklahoma	61	5
Kansas	132	3	Pennsylvania	1	0
Kentucky	132	3	So. Carolina	806	182
Louisiana	8	0	South Dakota	634	3
Maryland	6	1	Tennessee	174	6
Michigan	390	5	Texas	5	3
Minnesota	17,001	120	Virginia	19	0
Mississippi	564	120	Wisconsin	84	0
Missouri	3,837	306	Total	90,435	2,151

¹ Less than 500 bushels. Note: The total quantity of 1957 crop put under support includes purchase agreements, while redemptions are only from the quantity put under loan.

SUPPLIES. Supply and distribution of the 1954-57 soybean crops, reported by Agricultural Marketing Service (1,000 bu.)

Grade	1954-55		1955-56		1956-57		1957-58	
	March 1958	February 1958	March 1957	Oct.-Mar. 1957-58	Oct.-Mar. 1956-57	1,000 bu.	1,000 bu.	1,000 bu.
No. 1	6,472	33	4,183	27	2,462	16	50,548	22
No. 2	7,957	41	6,444	41	6,902	43	98,650	42
No. 3	3,412	18	3,174	20	3,054	19	58,086	25
No. 4	1,025	5	3,378	9	2,220	14	20,378	9
Sample	491	3	533	3	1,314	8	5,960	2
Total	19,357	100	15,712	100	15,952	100	233,622	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. ² Of the March receipts, 400 bushels were black, 800 green, and the remainder yellow soybeans.

Inspections in March included 2,934,000 bushels as cargo lots, 1,888,929 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

SEED IMPORTS. Imports of soybean seed into the United States in the period July 1, 1957, through Mar. 31, 1958, were 106,000 pounds compared with 300 pounds for the same period a year earlier, according to Agricultural Marketing Service. All imports for the last 9-month period were from Canada.

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